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Some suggestions towards the development of a maritime policy for Trinidad and Tobago

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SOME SUGGESTIONS TOWARDS THE DEVELOPMENT OF A MARITIME POLICY FOR TRINIDAD AND TOBAGO

BY

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TRINIDAD AND TOBAGO.

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I certify that all material in this dissertation which is not my own work has been identified and that no material is included for which a degree has been previously conferred upon me.

The contents of this dissertation reflect my personal views and are not necessarily endorsed by the University.

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PARENTS

CONTENTS

SOME SUGGESTIONS TOWARDS THE DEVELOPMENT OF A MARITIME POLICY FOR TRINIDAD & TOBAGO.

LIST OF FIGURES.

LIST OF TABLES.

ABSTRACT OF THE TITLE PAGE.

The purpose of the paper is to provide some guidelines for the development of a maritime policy for Trinidad & Tobago. It is felt that although clear goals and objectives may be identified for the resolution of issues and problems in the sector, these will not come to fruition, unless a clear direction is given to the various agencies. For purposes of this paper the maritime sector is defined as the ports, shipping, maritime environment/safety of Trinidad & Tobago. Given the extensiveness of the aforementioned, only an overview of the pertinent issues will be outlined, since each sub-area can be the subject of an in-depth analysis. The maritime sector is characterised by the inter-relatedness of its various activities and it is necessary to link these components to ensure cohesion and consistency in the policy approaches. There are some issues and problems which require a regional approach e.g. safety of shipping, and ideally the maritime policy of the country should develop within the context of a regional maritime policy. The maritime policy of Trinidad & Tobago can be through restructuring and rationalization, the development of commercially-oriented and efficient port and shipping industries, the creation of a pollution-free environment through the reduction and elimination of pollutants from source to destination, and the enhancement of the quality of life of present generations without jeopardizing that of future generations.

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CHAPTER ONE

INTRODUCTION

1.1 TRINIDAD AND TOBAGO- A BRIEF OVERVIEW.

The twin-island state of Trinidad & Tobago is the most southerly of a chain of islands which extend from Florida in the North to Venezuela in the South, at approximately 10 degrees north latitude and 61 degrees west longitutide. The combined area of these two islands is 5128 square kilometres(sq.kms).

The islands experience a tropical climate with an average temperature of 30c. The size of the population is appromixately 1.2 million people, and it is essentially a multi-religious and multi-racial society. English is the principal language of the country.

Trinidad & Tobago gained its independence from Britain in 1962, and achieved its Republican status in 1976. It is a parliamentary democracy with a President as head of state, and a Prime Minister as head of government. The political system therefore means that there exists the separation of the legislative, judicial and executive powers. The internal affairs of Tobago are administered by the Tobago House of Assembly, which was established in 1980.

The economy of the country is heavily dependent on petroleum which is the major source of foreign exchange, with a contribution to G.D.P. of 27% in 1991.[1]

The current thrust is to reduce the country's dependence on oil as a major generator of foreign exchange, through an increased diversification of the economy into other energy-based industries (urea, methanol and ammmonia), manufacturing, agriculture and tourism sectors.

Some of the principal markets for exports and imports include the United States of America, United Kingdom, the European Economic Community (E.E.C.)., Caribbean Common Market (CARICOM) countries, and non-commonwealth Caribbean countries.

1.2 MAJOR CHARACTERISTICS OF THE MARITIME SECTOR IN TRINIDAD & TOBAGO.

It has been acknowledged and recognised that Trinidad & Tobago is a maritime nation. The islands are bordered by bodies of water which are abundant and rich in marine resources namely oil, gas and fisheries. These resources have been and continue to be explored and exploited for the economic growth and development of the nation. Sea transport has always played a critical role as a communiciation link for the movement of goods and passengers between the twin-island state, in addition to other islands within the Caribbean region and extra-regional countries.

Trinidad and Tobago continues to be dependent on its exports and imports for its economic survival. Not-withstanding the strides made in the aviation industry, 90% of the country's imports and exports continue to be transported by ships, which is merely a reflection of a situation that prevails in the international transport of goods.

Some of the nation's diversification proposals will further increase the country's dependence on this mode of transport. Therefore, consideration should be given to the further expansion and development of the transportation infrastructure e.g ports and shipping, since the latter would be required to keep abreast of these plans.

Presently, the shipping sector consists of a national shipping company (Shipping Corporation of Trinidad & Tobago), major investments in a regional shipping corporation (West Indies Shipping Corporation), and a number of foreign shipping lines.[2] There is also an inter-island ferry service known as the Government Shipping Service(G.S.S) for the movement of passengers and cargoes between the two islands.[3] The latter is managed and operated by the Port Authority of Trinidad and Tobago. One of the ancillary services which has been developed is a ship repair facility titled 'Caribbean Dockyard Ship Repair Facility'.

Alongside, the developments in shipping, one has seen the growth of a number of ports both public and private. Currently there are four main public ports located at Port-of-Spain, Point Lisas, Scarborough-Tobago and San Fernando[4] and 18 private ports located throughout the country.[5] The main areas of activity of the public ports are containerized cargo, berthing of cruise ships, liquid and dry bulk handling. The private ports are specialist ports handling mainly dry or liquid bulk commodities.

Some of the major associations involved in shipping are:-

(a)The Shipping Association of Trinidad and Tobago which represents parties which include shipping agents or representatives of foreign shipping lines, port authorities, state shipping companies, ship chandlers and regional shipping companies.

(b)The Pilots' Associaton which provides pilotage as needed in respect of the ports, and

(c)The Seamen and Waterfront Workers' Trade Union(SWWTU), which represents a large proportion of the workers in the sector.

In addition, Trinidad & Tobago is affiliated to a number of international bodies e.g. the International Labour Organization (I.L.O.), International Maritime Organization (I.M.O), and the United Nations Conference on Trade and Development(UNCTAD). The country has also ratified a number of important maritime conventions. Some examples of these include:-

(i)The International Convention on Load Lines 1966(LL 1966).

(ii)The International Convention on Tonnage Measurement of Ships, 1969(Tonnage 1969).

(iii)The Convention on the International Regulations for the Prevention of Collisions at Sea 1972, as amended (COLREG 1972).

(iv)The International Convention for the Safety of Life at Sea, 1974(SOLAS).

Since independence, Trinidad & Tobago has enacted the Shipping Act No. #24 of 1987 which has replaced the application of the 1894 United Kingdom Merchant shipping Act and previous shipping legislation relating to maritime safety. However, the other shipping legislation which was derived from the ordinances made when Trinidad & Tobago was a colony has remained virtually unchanged to this day. Some of these are:-

(a)Motor launches Act 21 of 1926.

(b)Pilotage Act 1939.

(c)Harbours Act 1947.

This Shipping Act laid the basis for the creation and establishment of a maritime administration now known as the Maritime Services Division. The latter is therefore responsible for the regulation and development of safe shipping including the control of Trinidad and Tobago ships wherever they may be and all other ships within the waters of Trinidad & Tobago.

1.3 THE CASE FOR A MARITIME POLICY FOR TRINIDAD AND TOBAGO.

To support and ensure the development and growth of the country's maritime activities, the necessary framework should be enhanced and strengthened. This should consist of two major ingredients:-

(a)A Maritime policy.

(i)Maritime Legislation.

(b)Maritime Administration.

With respect to (ai) and (b), steps have already been initiated with the enactment of the Shipping Act No. #24 of 1987 and the creation and establishment of a maritime administration namely the Maritime Services Division.

To some extent the maritime legislation that is enacted should reflect the maritime policy that is eventually enunciated for the country.

The last long-term plan for the country titled- **'Medium Term Macro-Planning Framework 1989-1995 '** has formulated policy guidelines for a number of areas for example, Tourism, Agriculture, Aviation and Petroleum. However, there is no reference to a maritime sector in the document, although broad 'policy' guidelines for the ports and shipping industries were enunciated.[6] These were reviewed under the rubric of infrastructural development.

Policy may be defined as a course, line, plan of action.[7] The former is important since it lays the basis for the realization of goals and objectives that have been defined for the sub-sectors/sectors of an economy. Without such a policy, the path to be pursued, the necessary action to be taken for the planning and management of the sub-sectors/sectors is made highly improbable if not impossible. In fact the goals and objectives that have been identified to redress problems or issues; or to assist in the overall enhancement of the sub-sector/sector will be very difficult to attain.

Maritime policy is a broad, all-embracing concept which covers many facets of the maritime field. **It can be defined as the state's policy, approaches or attitudes or commitments to all the major activities within the maritime arena, which includes:-**[8]

(i)The nature and extent of national maritime legislation(i.e, what are the maritime matters that it wishes to cover, control and/or regulate through such legislation);

(ii)Registration of ships(whether majority participation of nationals or otherwise in the ownership of ships under its flag);

(iii)Safety standards and safe practices to which national ships (and their equipment) should conform;

(iv)Development of human resources, manpower planning and optimum utilization of such manpower in the maritime sector;

(vi)Standards of competence required of its marine personnel (i.e., education/training, examination and certification of its seafarers, etc.)

(vii)Ports-their development, control, management, services provided, and safety;

(viii)Protection of the marine environment (prevention, control and combat of marine pollution);

(ix)Development of ship-building, ancillary industries and ship-repair facilities.

It will be difficult in a paper of this nature to provide an in-depth study of all the above-mentioned and pertinent issues relating to a maritime policy. After an assessment and review of the maritime issues and problems in Trinidad and Tobago, and prioritization of same, the scope of this dissertation will be confined to an analysis of the following areas:-

(i)Ports;
(ii)Shipping;
(iii)Maritime Safety;
(iv)The Marine Environment.

Some of the major issues/problems that need to be addressed in the maritime sector are as follows:

(i)Out-dated Maritime legislation, some of which have not be revised for the last 50 to 60 years. For example, Motor launches Act No. 21 of 1926, Pilotage Act No. 33 of 1939, Oil Pollution of the Territorial Waters Act No. 25 of 1951, and the Port Authority Act No. 39 of 1961.

(ii)Un-coordinated development of ports (including major public ports and private). There is no National Ports Authority nor National Ports Council to co-ordinate and rationalize the development of these ports. The impact of regional and international Trends and technology(in ports and shipping) and its implications for these ports.

(iii)Development of the Shipping industry, including a national fleet, and shipping capability. The proposed role of the government in the National Shipping Corporation (SCOTT), and the West Indies Shipping Corporation(WISCO). In this regard, the anticipated operations of these companies in an unregulated shipping market i.e. a market dominated by foreign shipping lines will also be addressed.

(iv)Improvement of maritime safety, and its relevant legislation with respect to the operations of the intra-island ferries, and the inter-island vessels which call frequently in Trinidad and Tobago. Such an approach will require regional co-operation.

(v)There is a need to develop adequate maritime training facilities given the dearth of trained manpower in the sector.

(vi) The need for the development of an institutional and legislative framework with respect to environmental management including the marine environment. One of the causes of pollution of the marine environment is related to land-based sources.

It should be recognised that integration of the various components of this policy is necessary, since the various activities in this sector are inter-related and developments and proposals pursued should complement each other e.g. ports and shipping.

Furthermore, measures introduced in these areas also impact on other maritime-related activities. Cognisance should be taken of this, and in this regard, one should note the inter-relationship with the country's marine resources. Therefore, particular care should be taken of minimizing and mitigating the effects on the marine environment, which can act to the detriment of these resources.

This dissertation has been divided into three main areas:-

(A) A description of the characteristics of the Maritime Services Division, the Ports and Shipping industries, Marine Environment and Maritime Safety and the major problems being experienced in the various sectors. This will also include the policy proposals, if any, that have been outlined for these areas. The main reference in this regard will be the last long-term plan titled **'Medium Term Macro-Planning Framework 1989-1995'.**

(B)i<u>A Critical Analysis</u> of the Maritime Services Division- its role & functions which will include an assessment of same, an a review of its operational constraints.

ii)An analysis of the policy proposals, if any, that has been outlined for the above-mentioned areas. This will include an outline of some of the policy options which could be pursued for these areas, and recommendations.

(C)<u>Conclusions & Strategies</u>-Essentially a new policy approach. An outline of proposed strategies for the Ports and Shipping industries, Marine environment and Maritime Safety.

Finally, the author will like to indicate that this study was undertaken at a considerable distance from its frame of reference, which sometimes resulted in delays in obtaining data (including its non-receipt in some cases), and sometimes the impossibility of reviewing and/or verifying certain information that has been utilized for the analysis undertaken.

NOTES & REFERENCES.

1. Review of the Economy of Trinidad & Tobago(1991), p.6. The Central Statistical Office Printing Unit Trinidad & Tobago.

2. Trinidad & Tobago had 40% shares in the regional shipping company as at 31 December 1991.

3. National Transportation Policy project (Draft Final Report)- Volume 11 D, pp. 23-8 - Marine Sector and Trinidad and Tobago Services - Lea Pal Joint Venture; March, 1983.

4. The port at San Fernando is not utilised presently because of its poor state.

5. Port Authority of Trinidad & Tobago- Customs and Excise Department.

6. National Planning Commission (Sept 1990) -Medium Term Macro Planning Framework 1989-1995. Central Statistical Office.

7. Roget's International Thesaurus (3rd ed.)- Collins, London and Glasgow.

8. Vanchiswar, P.S.- Establishment/Administration of Maritime Affairs with particular reference to developing Countries, Volume 1, pp. 49-51 - World Maritime University, Malmo, Sweden- Revised, 1987.

CHAPTER TWO

LEGISLATIVE AND ADMINISTRATIVE FRAMEWORK

2.1 INTRODUCTION.

One of the mechanisms for the efficient operation of any industry, is the legislative and administrative apparatus. The former provides the administration with the necessary framework within which to operate, defining the scope of its authority and its power to implement and enforce measures for the regulation of the industry. An additional responsibility of the administration will be the revision and amendment of these laws to keep abreast with changes that impact on the industry.

This chapter will examine the primary shipping legislation in Trinidad and Tobago, the organizational structure of the Ministry of Works and Transport, its inter-relationship with the main agencies in the ports and shipping sector, and its role with respect to the marine environment. This will include an overview of major ministries involvement in the maritime sector.

To some extent, the legislation of the country will reflect the maritime policy that is finally enunciated. Additionally the agencies within the maritime sector will be responsible for implementing the above-mentioned policy to ensure that the goals and objectives that were outlined for the sector, will materalise.

2.2 LEGISLATIVE

2.2.1 SHIPPING AND PORTS LEGISLATION

The primary shipping legislation in Trinidad & Tobago governing the above-mentioned areas are as follows:-

(a) POLLUTION

(i)Oil Pollution in the Territorial Waters Act 1951.

(b) PORTS AND HARBOURS

(i) Harbours Act(50:06) 1880-1947.

(ii) Port Authority Act(51:01) 1961-47.

(iii)Pilotage Act(51:02) 1939-1965.

(iv) Carenage Pier Act(51:03) 1948.

(v) La Brea Jetty & Tramway Act(51:04) 1894-1962.

(c)SAFETY

(i)Merchant Shipping Act(50:01) 1916-1976.
(repealed by Shipping Act #24 of1987).

(ii)Motor Launches Act(50:08) 1926.

(iii)Marking of Ships Act(50:09) 1945.

Prior to 1962, the Shipping legislation of Trinidad and Tobago was governed by the 1894 United kingdom Shipping act, supported by ordinances made locally. However, after the country became independent in 1962 this act was no longer applicable. Consequently, the ordinances were changed to Acts and made part of the new compilation of laws of Trinidad & Tobago. In 1987, a new Shipping Act was enacted which replaced the application of the United Kingdom Merchant shipping act and previous shipping legislation relating to maritime safety. However, the other shipping legislation which was derived from the Ordinances has remained virtually unchanged to this day.

The Harbours Act is the second oldest piece of shipping legislation on the lawbooks. Under this Act, there are six harbours. These are:-

(a)Port-of-Spain.

(b)Scarborough.

(c)San Fernando.

(d)Brighton.

(e)Point Lisas.
(f)Point-a-Pierre.

As mentioned, there are 18 private ports in Trinidad (See Table 2.1 and Figure 2.1). Some of these have been established under separate Acts, while others are not covered. The latter are therefore operating without adequate legal backing. Carenage and la Brea are examples of ports which were established under separate Acts, but Claxton Bay, ALCAN(Aluminium Company of Canada) and Pt. Fortin are among those that are not covered.

Many of the provisions of the Harbours Act reflect its out-datedness. For example, "a master is liable to a fine of $200.00(TT) if he does not keep a buoy constantly fixed to every anchor which the vessel lets go". Additionally, there are various regulations under the Harbours Act, but these are so out-dated that none of the provisions have been enforced during the last 20 years.

The Port Authority of Trinidad & Tobago was established by the Port Authority Act Chapter 51:101. This act "makes provisions for a co-ordinated and integrated system of harbour facilities and port services, connected therewith, and other matters relating thereto and connected therewith, by means of the establishment of a Port Authority".

The two main provisions to this act are that it establishes the Port Authority of Trinidad & Tobago(PATT) and the Government Shipping Service(G.S.S), and it states the rights and obligations of the PATT in relation to the ports and harbours under its control.

The Shipping Act No. #24 1987, is the primary legislation providing for the control of ships and shipping.

TABLE 2.1.

PRIVATE PORTS IN TRINIDAD AND TOBAGO.

LOCATION	AUTHORITY/OPERATOR.
1.BRIGHTON/LA BREA	TRINIDAD LAKE ASPHALT CO.LTD AND TRINIDAD & TOBAGO PETROLEUM PETROLEUM COMPANY.
2.CARENAGE/TEMBLADORA	ALCOA STEAMSHIP COMPANY.
3.CHAGUARAMAS/POINT GOURDE	CHAGUARAMAS TERMINALS LTD.
4.CHAGUARAMAS	TRINIDAD SALT COMPANY LTD.
5.CHAGUARAMAS	TRINIDAD DISTILLERS LTD.
6.CHAGUARAMAS	SWAN HUNTER TRINIDAD LTD.
7.CLAXTON BAY	TRINIDAD CEMENT LTD.
8.CRONSTADT	BARYTES AND MINERALS LTD.
9.GALEOTA POINT	AMOCO TRINIDAD OIL COMPANY.
10.POINTE-A-PIERRE	TRINIDAD & TOBAGO PETROLEUM COMPANY.
11.POINT FORTIN	TRINIDAD AND TOBAGO OIL CO. LTD.
12.POINT LISAS/ GOODRICH BAY	CARONI LTD(1975).
13.POINT LISAS/ SAVONETTA	FEDERATION CHEMICALS. LTD.
14.PORT-OF-SPAIN EAST SEA LOTS	NATIONAL PETROLEUM COMPANY LTD.
15.PORT-OF-SPAIN WEST SEA LOTS	INDUSTRIAL DEVELOPMENT CORPORATION.
16.PORT-OF-SPAIN SEA LOTS	NATIONAL FISHERIES CORPORATION
17.PORT-OF-SPAIN WEST SEA LOTS	CARIBBEAN SALVAGE LTD BAIN'S WHARF.
18.SOBO/LA BREA	TRINIDAD TESORO LTD.

SOURCE:- PORT AUTHORITY OF TRINIDAD AND TOBAGO CUSTOMS AND EXCISE DEPARTMENT.

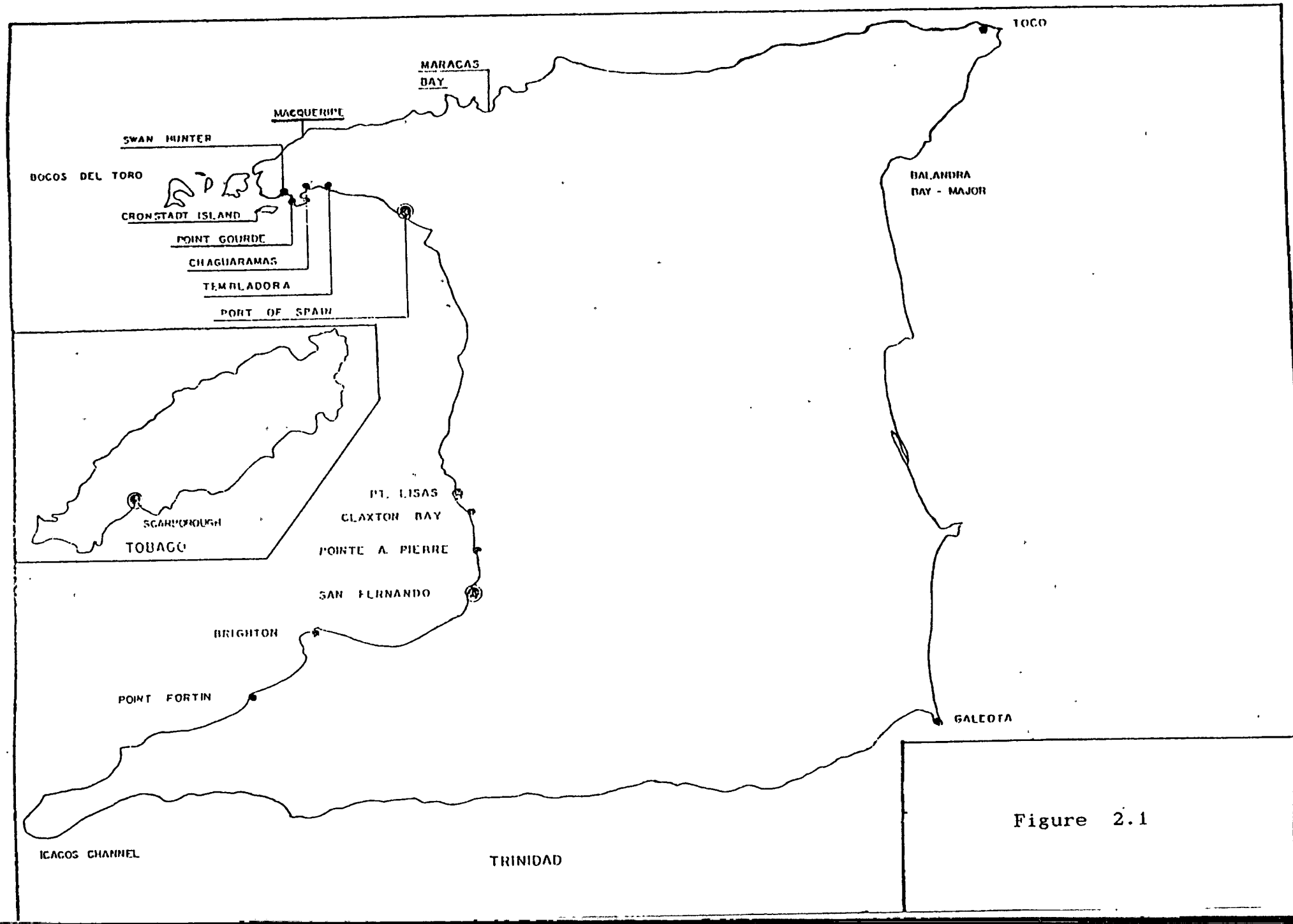

TOCO
MARACAS BAY
MACQUERIPE
SWAN HUNTER
BOCOS DEL TORO
CRONSTADT ISLAND
POINT GOURDE
CHAGUARAMAS
TEMBLADORA
PORT OF SPAIN
BALANDRA BAY - MAJOR
SCARBOROUGH
TOBAGO
PT. LISAS
CLAXTON BAY
POINTE A. PIERRE
SAN FERNANDO
BRIGHTON
POINT FORTIN
GALEOTA
ICACOS CHANNEL
TRINIDAD

Figure 2.1

This legislation provides " for the registration and licensing of ships, matters relating to crews, safety of life at sea and matters incidental thereto". Therefore the control and safety of Trinidad and Tobago ships and crews, wherever they may be, and foreign ships within the waters of Trinidad and Tobago is governed by the Shipping Act No. #24 1987.

It has been proposed that when the licensing regulations are made under the Shipping Act No. #24 1987, that the Motor Launches and the Marking of Ships Acts would be repealed.

The main areas of the Shipping Act No. #24 1987 are as follows:-

(i) Restriction on Trading.
(ii) Provisions for registration and licensing.
(iii)Mortgages and Liens.
(iv) Manning and Certification.
(v) Engagement of Seamen.
(vi) Collision and Safety Precautions.
(vii)Safety Conventions.
(viii)Dangerous goods.
(ix) Wreck & Salvage.
(x) Accidents & Incidents.
(xi) Detention of Ships.
(xii) Administration of the Act.

2.2.2 MARINE ENVIRONMENT LEGISLATION.

As mentioned, the main primary legislation with respect to marine pollution is the Oil Pollution of Territorial Waters Act, Chapter 37:03 (Act 25 of 1951). In addition to this main piece of legislation, there are a number of acts governing the operations of agencies whose activities could impact on the marine environment. The provisions of these acts will be discussed in Chapter IV.

Some of these main acts are as follows:-[1]

(a)The Anti-litter Act of 1973 deals with the prevention of illegal dumping of solid wastes into watercourses.

(b)The Petroleum Act and Regulations(Chapter 62:01) 1969 have as their intent the consolidation and amendment of the law relating to petroleum, so as to make better provision for the exploration, development and production of petroleum, and for matters consequential thereto. Under this Act, the regulation of pollution is considered under Section 29 whereby it is stated that "the president of the country may make such regulations as he considers necessary or expedient for carrying out the purposes of this Act, and in particular for the prevention of pollution of land, water or air for compensation thereof".

(c)A draft bill has been prepared entitled 'Mines, Borings and Quarries(Amendment) Act 1987. This is intended to replace and improve the original Quarries Act. The aim of this bill is " to regulate the operations of the quarries to prevent the pollution of rivers and waterways" .

2.3 ADMINISTRATIVE

2.3.1 MINISTRY OF WORKS AND TRANSPORT.

The Ministry of Works, Infrastructure and Decentralization was dissolved and the Ministry of Works & Transport was created in December 1991. The activities of the Ministry are undertaken by several divisions, units, and statutory bodies.[2] The portfolio includes:-

-Construction & Maintenance of Government buildings.
-Highways
-Bridges
-Motor Vehicles(Licensing and Control)
-Shipping(SCOTT and WISCO)

-Main Roads
-Drainage and Irrigation
-Traffic Management
-Civil Aviation
-Harbour and Safety in Coastal Waters
-Unemployment Relief Programmes

However, for purposes of this study only the port, shipping and the operations of the Maritime Services Division is of relevance. An organizational chart of the Ministry of Works & Transport is attached (See Figure 2.2).

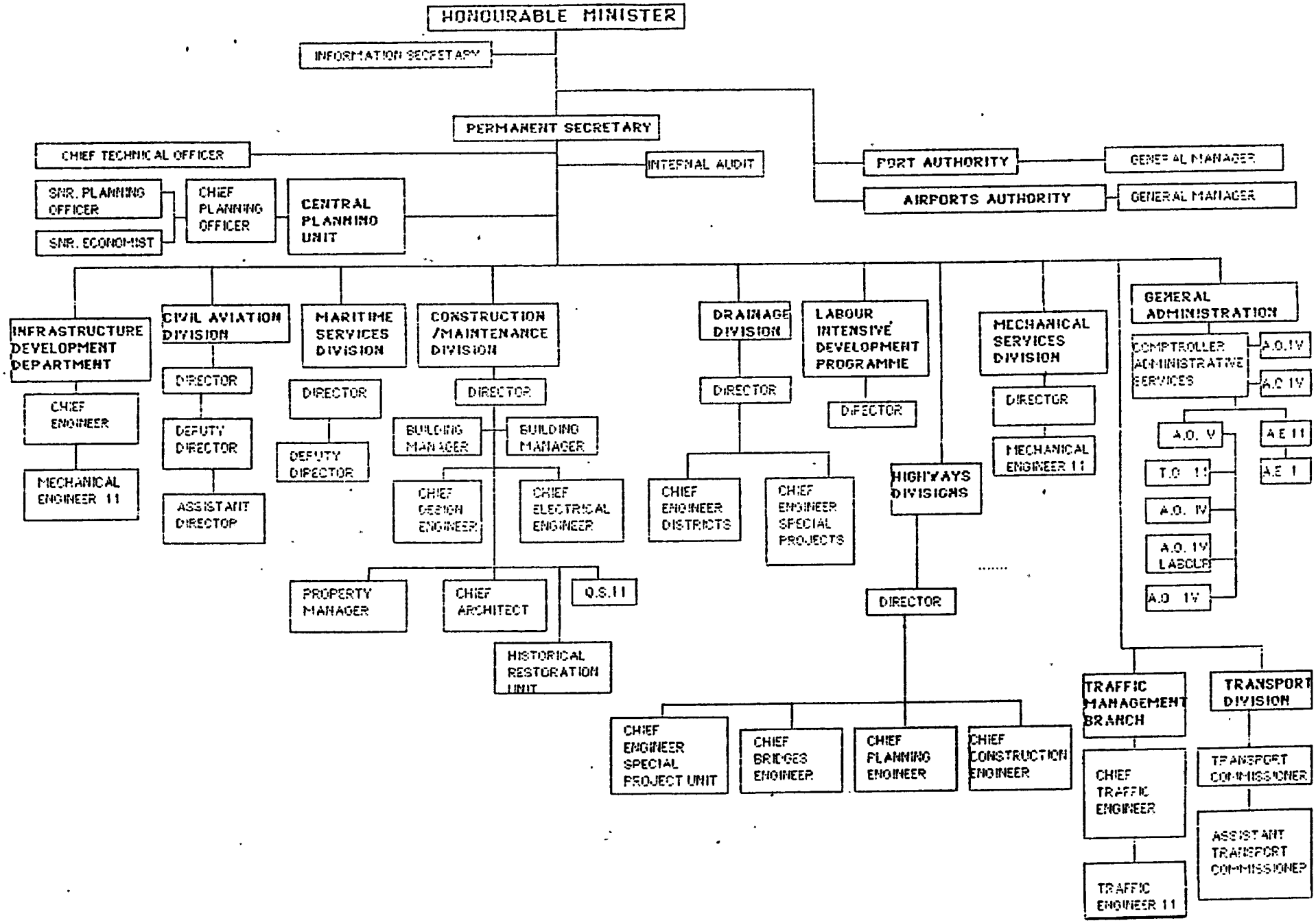
The Maritime Services Division also falls within the portfolio of this ministry. This division was created to administer the provisions of the Shipping Act of 1987. The functions and role of this Division will be discussed in Chapter V.

The Ministry's activities can be divided into two sections i.e. a works section and infrastructural component. The Works component has traditionally been associated with building construction and maintenance activities for government buildings e.g. post offices, health centres, primary schools, police stations; as well as the construction and maintenance of primary roads, bridges, and drainage and irrigation works to prevent flooding as well as to protect property and improve agricultural yields on agricultural holdings.

The Infrastructural component of the ministry incorporates developments in air, sea and land transport. It encompasses on the one hand the installation of physical infrastructure e.g. berths, taxi-ways, terminal buildings, highways (Churchill Roosevelt Highway), drainage and irrigation works.

MINISTRY OF WORKS & TRANSPORT
ORGANISATIONAL CHART

Figure 2.2



On the other hand, it addresses the operation of an appropriate institutional framework for the proper management of the physical infrastructure e.g. Airport Authority, Civil Aviation, Port Authority, Traffic Management Branch, Transport Division, and other regulatory bodies.

2.3.2 PORT AUTHORITY OF TRINIDAD & TOBAGO(PATT).

PATT's administration manages and operates the ports of Port-of-Spain, and Scarborough together with operating the Government Shipping Service(G.S.S) between Trinidad & Tobago.

FUNCTIONS.

The functions of the Port Authority as outlined in the Port Authority Act at Sections 8(i) and (ii) are detailed hereunder:-[3]

(i)to develop the harbours of Trinidad & Tobago described in the first and second schedules and such other harbours as may from time to time be vested in the Authority under Section 5.

(ii)to operate the Government Shipping Service between Trinidad & Tobago in accordance with section (ix) of the Act.

(iii)to collect the dues and charges authorized by the act, and

(iv)generally to be responsible for the carrying out of the Act.

2. The development of the harbours and the operation of the port Service to include the following:

(i)the provision and maintenance of facilities for the entry and berthing of ships, the landing and embarkation of passengers, the loading, unloading, storage and warehousing of cargo;

(ii)the provision and maintenance of equipment for hoisting,lifting and transportation of cargo;

(iii)the erection, equipment and maintenance of quays, wharves, jetties, locks and piers;

(iv)the provision of docking facilities, slipways and machine shops,

(v)the provision of lights and beacons subject to the approval of the Harbour Master, towage services, fire-fighting services, watering services, bunkering services, rescuing services, dredging services, salvage services, repair services and such other services as are ordinarily required by ships coming into Port in the course of their voyages.

2.3.3 POINT LISAS PORT.

The Point Lisas Port is operated directly under the management and supervision of the state enterprise, Point Lisas Industrial Port Development Corporation (PLIPDECO), with a chief executive officer, chairman and Board of Directors. The Port is under the direction of a manager who reports directly to the Chief Executive Officer of PLIPDECO. PLIPDECO reports to the Ministry of Trade, Industry, & Tourism. This port was designed to serve the needs of the users of the Industrial Estate.

2.3.4 PORT OF SAN FERNANDO.

This port falls under the jurisdiction of the Borough of San Fernando, which is in turn accountable to the Ministry of Local Government.[4] However, development is funded by the Ministry of Finance.

2.3.5 PRIVATE PORTS.

As mentioned, there are 18 major port facilities which are owned by private companies and used for handling single commodities usually in liquid or dry bulk form.[5] The internal management of these facilities is carried out by the companies, some of which are state enterprises.

These state enterprises fall under the portfolio of the relevant ministry. For example Caroni (1975) ltd, which operates Point Lisas/Goodrich Bay, is under the purview of the Ministry of Agriculture, Land and Marine Resources.

2.3.6 WEST INDIAN SHIPPING CORPORATION.

The West Indian Shipping Corporation(WISCO) was constituted by the West Indies Federation in 1961. The expressed purpose of establishing WISCO was to maintain and operate shipping services for the transport of mail, passengers and goods within the Caribbean region. The act of 1961 establishing WISCO was superceded by a new Act in 1976, incorporating a new agreement of the participating governments.

WISCO shares are currently held by Trinidad, as the major shareholder with 40%, Jamaica with 30%, Barbados 10%, Guyana 10% and the remaining 10% is held jointly by Antigua, Dominica, Montserrat, St Lucia, St Vincent and Grenada.

WISCO now reports to the Ministry of Works & Transport.

2.3.7 SHIPPING CORPORATION OF TRINIDAD AND TOBAGO(SCOTT).

The Shipping Corporation of Trinindad & Tobago(SCOTT) is a government state enterprise which was set up to carry on the business of shipowners and to charter, hire, purchase or otherwise acquire and work vessels of all descriptions in the business of ocean transportation in all its fields.

SCOTT was started in 1977 with a 51% shareholding by the Trinidad & Tobago government. Since 1980, the government has owned it 100%.

The Shipping Corporation is a state enterprise and presently falls under the purview of the Ministry of Works & Transport.

2.4 PRESENT MARINE SECTOR ORGANIZATION.[6]

There are several ministries which have a role to play in the administration of maritime affairs. These are the Ministry of Works and Transport, Ministry of Energy and Energy Industries, Ministry of National Security, Ministry of Agriculture, Land and Marine Resources, Ministry of Finance, the Ministry of Health and the Ministry of Foreign Affairs. Most of these ministries have agencies or divisions with maritime-related responsibilities.

However, the agencies with major roles include:-

(i)Ministry of Works & Transport which is responsible for:-

(a)The Port Authority of Trinidad & Tobago(PATT).

(b)The Maritime Services Division.

(c)The Pilotage Authority.

(d)The West Indies Shipping Corporation(WISCO).

(e)Shipping Corporation of Trinidad & Tobago(SCOTT).

ii)Ministry of Trade, Industry and Tourism, which is responsible for:-

(a)Point Lisas Industrial Development Corporation Ltd(PLIPDECO).

(iii)Ministry of Finance, which is responsible for:-

(a)Customs & Excise.

Other ministries which are involved include Local Government for the wharf facilities at San Fernando and National Security for the Coast Guard, which is responsible for search and rescue.

In addition there are many dedicated port facilities operated by companies in the private sector. See figure 2.3 for the present organization of Government agencies involved in marine activities.

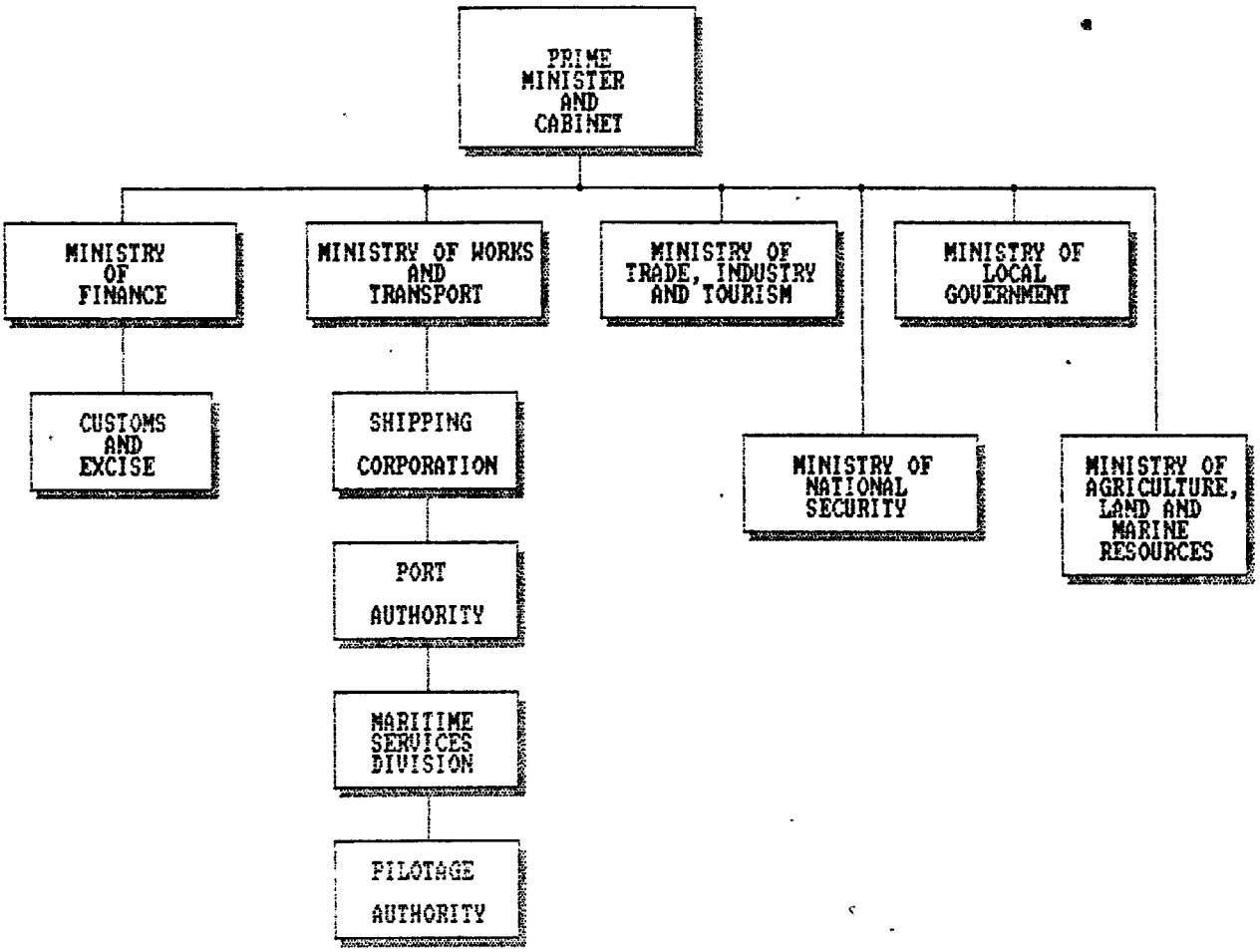
Already, positive steps have been undertaken towards the up-dating of the country's maritime legislation with the enactment of the Shipping Act of No. #24 1987, however there is a need for a review of existing legislation to keep abreast of developments in the national and international environment.

Additionally, there is a need to up-date legislation addressing the commercial aspects of shipping. For example, legislation governing the contract of carriage, by means of which the shipowner's liability under a sea contract is fixed, so that appropriate protection is available to shippers and consignees in the case of misadventure (the act currently applicable is the Bill of lading Act of 1894).

There is also a need for the government to adhere to a number of important maritime conventions such as the International Convention relating to Intervention on the high seas in cases of Oil Pollution Casualties 1969, International Convention on Civil Liability for Oil Pollution Damage 1969, and the International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage, 1971, which together provide for the protection of the environment and compensation for the oil pollution damage.

Administratively, attempts have made to place responsibility for the ports and shipping industries under the portfolio of one ministry, which ensures a given level of co-ordination, and harmonization of activities.

PRESENT ORGANIZATION OF GOVERNMENT INVOLVEMENT
IN THE MARITIME SECTOR



These measures need to be further enhanced, since an examination of the administrative framework for the regulation of pollution would reveal that while the structures do exist, they are scattered among many ministries. Further details will be discussed in Chapter IV.

Consideration should be given to the possible establishment of one central agency that will merge all the 'bits and pieces' into one cohesive and intergrated unit.

NOTES & REFERENCES.

1. Panel discussion on "Existing administrative and legislative controls for the prevention of pollution in the rivers and waterways of Trinidad & Tobago", pp.66-70. Rivers and Waterways- Our Business Protecting the Environment.

2. Statutory body is a quasi-government body which normally operates with a given level of autonomy.

3. Port Authority Act, Chapter 51:01, pp. 11 and 12.

4. Local Government is the government of a specific local area (as a city, county, or town) constituting a sub-division of a nation, state, or other major political unit.

5. Port Authority of Trinidad & Tobago-Customs & Excise Department.

6. National Transportation Policy Project (Draft Final Report) Volume IID-Marine Sector and Trinidad and Tobago-Lea-Pal Joint Venture; March 1983, pp. 23-12.

CHAPTER THREE

PORTS & SHIPPING, ITS OPERATIONS AND POLICY

3.1 INTRODUCTION

As mentioned in Chapter II, there are 21 ports in Trinidad & Tobago, which includes three main ports.[1] The west coast of Trinidad provides location for the majority of the island ports, mainly due to the sheltered nature of the Gulf of Paria and the population pattern along this side of the island (See figure 2.1). This chapter will concentrate on the operations of the ports of Port-of-Spain and Point Lisas, since they were the only major ports of significance to the national economy until 1990, when the port in Scarborough, Tobago, was widened and dredged. The others are private single-user ports dedicated to a single commodity.

'A seaport may generally be regarded as acting as a gateway through which goods and passengers are transferred between ships and the shore. Some may have other primary objectives e.g. those which are the terminals of major canals, or whose main activity is the supply of fuel; but it is convenient to regard these as exceptions and to concentrate on the most common functions.'[2]

Ports can be classified according to the control meaning that they can be either locally, regionally or nationally controlled. For example, in Australia ports are controlled by the individual states. In Singapore, there is only one port which is nationally owned; and in Canada, navigation and ports are expressly stated to be the responsiblity of the federal government in Ottawa.

Additionally, ports may be analysed based on the nature of the activities undertaken.

In some cases, the Port Authority itself performs all, or almost all, of the activities carried on within the port area, directly employing everyone concerned. Such a body will, for example, take direct responsibility for loading and unloading of ships and for handling goods into and out of its own storage facilities. It may be termed a 'comprehensive' port authority. Examples are to found in Israel, Singapore and in many parts of Africa.

At the opposite extreme is the Port Authority which plans its port and exercises overall control over its activities carried on within it, but which delegates these extensively to private sector companies. This may be termed a 'landlord' Port Authority. Landlord ports sometimes leases out berths or terminals to the private sector for long periods; sometimes they merely permit firms selected by the ship operator or charterer to work cargo as and when they can get the business. Examples may be found in Australia, Canada, Europe and the U.S.A.

With respect to port operations in Trinidad & Tobago, it should be noted that the two characteristics described above are applicable. The Port Authority of Trinidad & Tobago(PATT) is a 'comprehensive' structure with responsibilities for the ports at Port-of-Spain, and at Scarborough and is also an agent for the government ferry service. It is also the employer of the labour which is responsible for cargo-handling operations. At the opposite extreme is the Port at Point Lisas which is a landlord port. The Point Lisas Development Corporation (PLIPDECO), a state enterprise, is the owner/developer of the estate including this port.

The specialized terminals, which have been especially built to handle a variety of solid and liquid bulk materials, are operated by the energy-based industries, which are involved in the production of ammonia, urea and methanol. The latter have been established on the Industrial estate.

The importance of this organizational structure for the overall operations of ports will be examined in Chapter VI.

3.2 BRIEF DESCRIPTION OF FACILTIES AT PORT-OF SPAIN AND POINT LISAS.

3.2.1 PORT-OF SPAIN.[3]

This port is the country's main port for the general cargo trade. The port has vested in it 130 hectares of land located on the city waterfront. The facilities include a 10 metre deep turning basin with appromixately 2,000 metres of quay which accommodates conventional berths, a container terminal, container berths, break-bulk berths and a dedicated cruise ship complex. These berths have been dredged to a depth Sw 9.5 metres.

Other facilities on the port include shallow draught facilities at CARICOM wharves and the government shipping service Ferry Terminal. National Fisheries and National Petroleum (two major state-owned companies) are tenants of the Port Authority of Trinidad & Tobago, and have their own marine infrastructure at East Sea Lots amounting to about 660 metres of shallow draught berthing space (See Figure 3.1).

3.2.2 PORT POINT LISAS.

This port is located on the West coast of Trinidad in the Gulf of Paria, and forms part of the Point Lisas Industrial Estate managed by Point Lisas Development Corporation a public-owned company(PLIPDECO). The heavy industries located here were mainly to utilize the country's natural gas reserves both as a fuel and a feed stock.

This port was originally built to handle specialized bulk cargoes for the clients of the estate, such as Iron and Steel, Methanol, Urea and Ammonia. Therefore, specialized terminals have been built for liquid and dry bulk handling. Apart from these, Point Lisas Development Corporation(PLIPDECO) operates a general cargo port that provided facilities for loading and discharging general cargo and containerized vessels, either Ro-Ro and Lo-Lo.

The Deep-water harbour consist of the Savonetta channel and turning basin which is dredged to a depth of 12.8 metres. Its main deep water berthing facilities are the ISCOTT DOCK- 406 metres and Savonetta Pier No.1-310 metres.

General and containerized cargo are handled at Berth 1a-30 metres and Berth No. 3-31 metres in length. The depth of both these berths are approximately seven metres(See Figure 3.2).[4]

3.3 MAIN PROBLEMS AT PATT AND PORT POINT LISAS.

3.3.1 MAIN PROBLEMS AT PATT.

As mentioned, the Port at Port-of Spain was Trinidad's main port for the handling of general cargo and until the 1980's operated in a monopolistic environment. This situation changed however with the coming on stream of the Port at Point Lisas.

Given its monopolistic position one may have expected that this port should have enjoyed super/abnormal profits or even break-even. However this was not the case, and in fact the history of the port has been characterised by heavy financial losses. The main reasons for this situation are as follows:

-Inefficiencies in the operations of the Port Authority which included over-staffing.

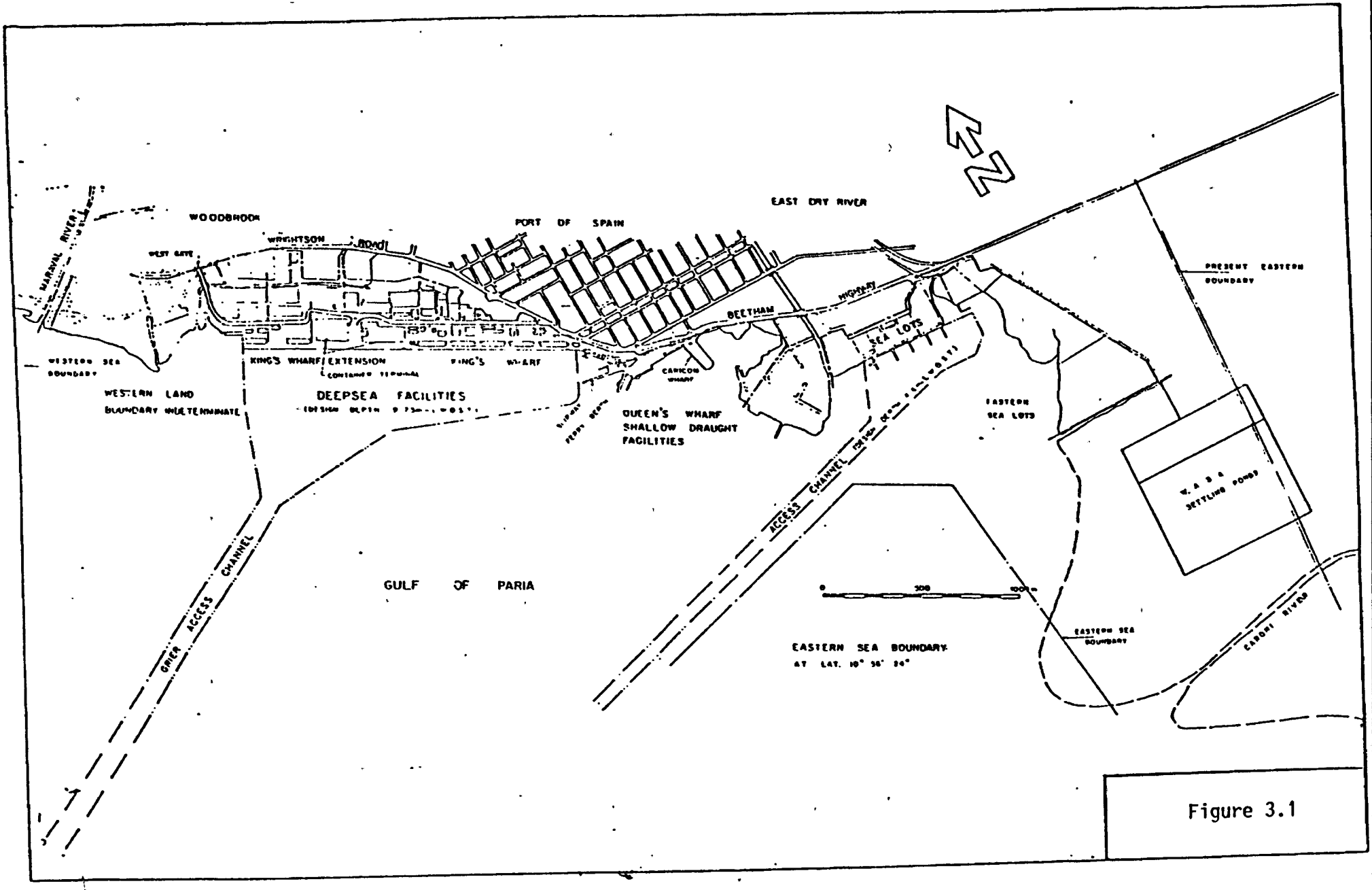

N
WOODBROOK
MARAVAL RIVER
WESTERN SEA BOUNDARY
WESTERN LAND BOUNDARY UNDETERMINATE
WEST GATE
WRIGHTSON ROAD
PORT OF SPAIN
EAST DRY RIVER
KING'S WHARF EXTENSION
KING'S WHARF
DEEPSEA FACILITIES
QUEEN'S WHARF SHALLOW DRAUGHT FACILITIES
CARICOM WHARF
BEETHAM HIGHWAY
SEA LOTS
PRESENT EASTERN BOUNDARY
EASTERN SEA LOTS
W.A.S.A. SETTLING PONDS
GULF OF PARIA
GRIER ACCESS CHANNEL
ACCESS CHANNEL
EASTERN SEA BOUNDARY
EASTERN SEA BOUNDARY AT LAT. 10° 38' 30"
CARONI RIVER

Figure 3.1

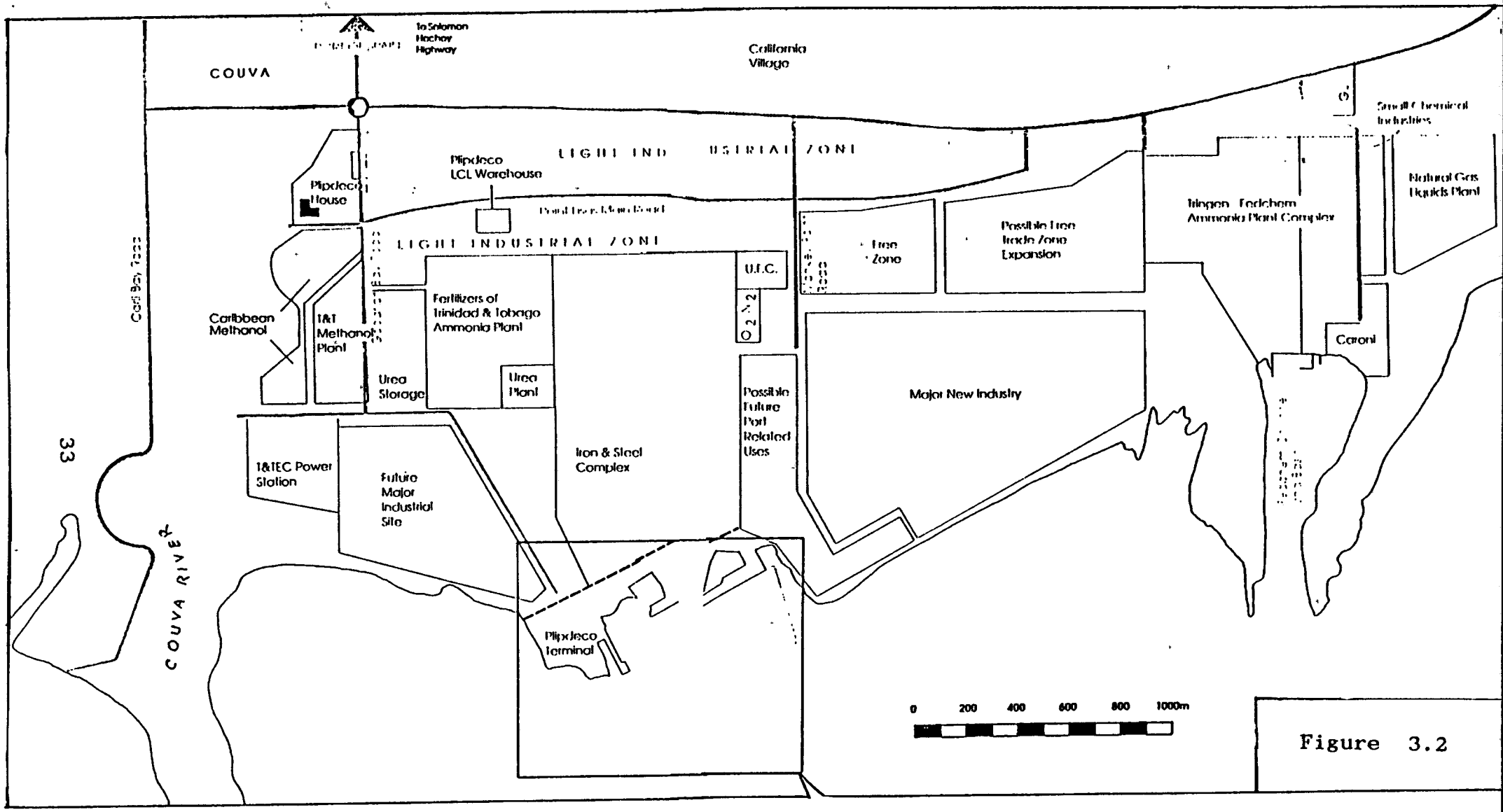

COUVA
To Solomon Hochoy Highway
California Village
LIGHT IND USTRIAL ZONE
Pipdeco House
Pipdeco LCL Warehouse
LIGHT INDUSTRIAL ZONE
Caribbean Methanol
T&T Methanol Plant
Fertilizers of Trinidad & Tobago Ammonia Plant
Urea Storage
Urea Plant
U.F.C.
Free Zone
Possible Free Trade Zone Expansion
Ingpen Fedchem Ammonia Plant Complex
Natural Gas Liquids Plant
Caroni
Major New Industry
Possible Future Port Related Uses
Iron & Steel Complex
T&TEC Power Station
Future Major Industrial Site
Pipdeco Terminal
Caribbean Sea
COUVA RIVER
33
0 200 400 600 800 1000m

Figure 3.2

-Reduction in cargo throughput as a result of the slow-down in the domestic economy. There was a fall in demand for consumption and capital goods due to the contraction in the economy as a consequence of the falling oil prices.
-Lower prices(port charges and cargo-handling) at other national and regional ports.
-Higher productivity and faster vessels turnaround time of other ports.[5],[6]

Undoubtedly, the monopolistic position enjoyed by the Port Authority led to a certain element of complacency and inefficiency. At that time, the port's operations were also highly labour-intensive, like most of the public utilities in the country. The port was heavily over-manned in relation to its operations. The number of employees in the port as at the end of 1987 was 2,870.[7]

To finance its operations, the port was and is still dependent on the central government for funding, and has been implementing measures, as indicated, to become financially independent. The Port Authority of Trinidad and Tobago was and is still classified as a public utility-under the portfolio of the Ministry of Works & Transport-i.e, a statutory body with a given level of autonomy. The Port Authority can therefore be termed a public sector port authority i.e. a public body established by the central government. While, there are many arguments in favour of these public sector bodies, the Port Authority appears to have suffered some of the disadvantages which characterises the operations of such an organization, since as a body it became entwined in the red-tape of the bureaucratic system. In addition to the excessive manning levels of the Port, the rate structure of the Port is set by the Public Utilities Commission(P.U.C.) as per P.U.C. Act chapter 54:01, Section 23(i).

The Port Authority did not have the freedom to establish or change its port charges. It operated under a fixed rate structure. It was only recently that the port was given the flexibility to operate within a certain range i.e. a variable structure with a maximum charge established by the same body. Government's approval is necessary to go above this maximum rate. In addition, major decisions, plans and recommendations have to be approved by various government departments (including Cabinet) which also restricts its flexibility.

3.3.2 INITIATIVES TO REMEDY PROBLEMS- STRATEGIC PLAN 1989-1993.

Given the factors described above, the Port Authority undertook an analysis of the constraints (internal and external) and also the international environment within which it was operating to develop new strategies.

Firstly, it launched a two-fold attack on its level of expenditure and also its revenue. The former involved an attempt to reduce cost; the latter involved attempts to increase its cargo throughput and exploration of new sources of revenue.

One of the expenditure items examined by the port was its labour force, which represents a large component of the operating cost of the Port Authority. The port introduced an employees' down-sizing programme. The number of employees was reduced from 2,870 in 1987 to 1,610 in 1990.*

Some other cost reduction measures adopted by the Port authority included:-

(a) The implementation of a two-shift system.
(b) Assignment of stevedore labour to longshore operations.
(c) Reduction of gang-sizes and general manning levels in the Container Terminal Operations.*

As can be seen from Table 3.1., the cargo tonnes at the Port Authority declined considerably from 1983. The cargo tonnes in 1990 represents approximately 45 % of the total for 1983. This co-incided with the down-turn in the economy, as a result of the falling oil prices. There was a reduction in demand for goods(capital and consumption) by consumers. Additionally, the expenditure on salaries and wages has declined considerably from 1983, because of the measures that has been implemented to-date. Efforts are also been made to reduce the operating expenses of the Port. The operating expenses for 1990 is approximately 38% of the total for 1983.

TABLE 3.1

REVENUE AND EXPENDITURE PORT AUTHORITY OF TRINIDAD AND TOBAGO.

YEAR	*CARGO THROUGHPUT TONNES	REVENUE ($000) ($TT)	SALARIES/ WAGES($000) ($TT)	OPERATING EXPENSES. ($,000) ($TT)
1983	1,859,867	121.9	207.9	275.5
1984	1,607,235	109.1	157.9	247.6
1985	1,227,295	89.5	144.9	202.7
1986	1,079,010	98.9	118.2	176.5
1987	754,183	-	105.8	141.5
1988	649,587	57.7	96.9	117.5
1989	684,971	53.3	75.9	134.0
1990	830,966.	59.4	57.6	101.9

SOURCE: Planning & Research Department-Port Authority of Trinidad & Tobago.

*CONTAINERIZED & GENERAL CARGO.

The Port also reviewed its organizational structure and in some cases created new departments, posts and expanded existing departments. For example, the Marketing Department was created in 1989, the Planning & Research Department was expanded and new staff introduced with additional responsibilities. The scope of this department was therefore widened. New posts e.g. Deputy-General Manager and Corporate/Legal Secretary were also created.

The Port Authority aims to increase its revenue flows by re-attracting lost cargo and also by exploring new avenues. With respect to the former, it should be noted that one of the problems experienced by the Port at Port-of-Spain in the early 1980's was extreme congestion, which meant that ships had to wait in port several weeks before discharging or loading of cargo. The existence of Port Point Lisas meant that they were able to capitalize on this situation and offer general cargo facilities to shippers and shipping companies. Ship operators were also attracted and diverted to other ports in the Caribbean where the rates were cheaper and productivity higher. This lead to a loss of cargo for the Port at Port-of-Spain. The aim, as mentioned earlier, of the Port is to re-attract this lost cargo.

In the area of revenue expansion, the Port Authority embarked on a programme of expanding business into areas that were previously unexplored. These will include:-

(i) Cruise Shipping and the Cruise Ship Complex.
(ii)Dredging services of the Marine Department.
(iii)Hydrographic surveys of the Marine Department.
(iv)Sale of advertising space.
(v)Cultural activities.
(vi)Real estate activities.

In February 1990, the Port Authority of Trinidad and Tobago commissioned Novaport Limited, a Canadian Consulting Company to prepare a future land-use plan showing the location and size of viable facilities, together with a phased development schedule, design concepts and standards. This is in line with one of its objectives of pursuing commercial real estate development. The Port Authority has hired two local consultants (joint-venture arrangements) to assist in the preparation of a land development Plan for the port as a result of the Novaport recommendations.

These consultants will be concerned with the implementational aspect of the plan, and in this respect submitted an interim report in July 1991. This interim report referred to as the **Waterfront Development Plan** is seen by the Port Authority as an intergral part of the city's rejuvenation. It is proposed to blend in rationalized port activities with that of leisure/ entertainment facilities, business, and commerce, housing, industry and public transportation. The plan contains provisions for its future cargo operational requirements and in this respect PATT has recommended that approximately 50 acres of land should be reserved for break-bulk and container operations.[10] One of the aims of the Port Authority is to become a semi-landlord port.

Financial self-sufficiency or the achievement of a given level of profitability is not the main indicator of a port's overall efficiency. A port may achieve such profitability due to its monopolistic position. It therefore needs to introduce measures to determine or monitor its efficiency i.e. supplement purely financial measures with physical and economic indicators. These may include such simple measures as labour, crane and berth productivities and the frequency of delays or breakdowns, whether mechanical or industrial. Measures of congestion such as ship's waiting and container dwell times may also be useful.

These physical productivity indicators measures should be supplemented by economic ones such as value added (or net value of output) per man.

In this respect, the Port has recently up-graded its information systems to monitor work performance and improve information flows. Management has also become more goal and task-oriented with the introduction of certain targets e.g. operational and financial to be achieved on a monthly and quarterly basis. Table 3.2 reflects the general improvements in its operational efficiency that has been achieved by the Port Authority.

TABLE 3.2

VESSEL RELATED OPERATIONAL INDICATORS 1983-1991.

YEAR	ARRIVAL RATE 1	WAITING TIME 2	SERVICE TIME 2	TURNAROUND TIME 2
1983	2.01	4.83	6.03	10.86
1984	2.23	1.42	3.73	5.15
1985	2.00	2.61	1.57	4.18
1986	1.84	0.50	2.40	2.90
1987	1.60	0.33	1.94	2.27
1988	1.56	1.60	2.03	3.63
1989	1.71	1.25	2.03	3.28
1990	1.70	-	2.06	2.06
1991	1.91	-	1.03	1.30

SOURCE: Port Authority of Trinidad & Tobago-Planning and Research Department.

1-REFERS TO VESSEL PER DAY.

2-REFERS TO DAYS PER VESSEL.

The Port Authority is already reaping the benefits of improvements in its efficiency via the attraction of increased transhipment cargo flows from NEDLLOYD LINES. This company has moved its Southern Caribbean's transhipment business to the port at Port-of-Spain.

3.3.3 PROBLEMS AT PORT POINT LISAS.

The port at Point Lisas is fairly new and has not been plagued with some of the problems experienced by the Port at Port- of-Spain. However, it too has suffered the consequences of the contraction in the economy, and implemented a number of restructuring proposals including cost-reduction measures.

TABLE 3.3

PROFILE ON REVENUE FLOWS AND CARGO AND BULK TONNES HANDLED AT THE PORT POINT LISAS FOR THE PERIOD 1983-1991.

YEAR	CARGO THROUGHPUT	BULK	REVENUE($M)
1986	208,128.	2,583,831	17.16
1987	180,123	2,403,362	18.26
1988	148,052	2,925,762	14.44
1989	119,335	3,157,272	13.15
1990	150,656	3,150,063	16.50
1991	189,283.	3,073,503.	16.80

SOURCE: SUMMARY OF ACTIVITIES FOR PORT POINT LISAS FROM 1984- 1991 -PLIPDECO AND ANNUAL REPORTS PLIPDEDCO FOR 1985- 1991.

Table 3.3 indicates that cargo and bulk tonnes at Port Point Lisas have been increasing, and that revenues have basically remained constant over the period.

As mentioned earlier, the administrative structure of Point Lisas is different from Port-of-Spain which may have worked to the advantage of the port at Point Lisas. The Point Lisas Industrial Point Development Corporation Limited is a public company and is the owner/developer manager of the complex including the Point Lisas Port. This port from its inception was operated along commercial lines, with a given flexibility to establish its rates and charges, as the market dictates, free from any statutory restrictions. Additionally, the port adopted a number of strategies to reduce costs and increase its financial viability. These included:-[11]

(a)In 1983, the Corporation was restructed and there were retrenchment of non-essential staff.

(b)Marketing thrust attracted new shipping lines, especially European(Bernuth Lines).

(c)The Corporation divested into Warehousing and Freezone.

(d)Increase in land usage consequently increase in tenants.

PLIPDECO has embarked on a programme of attracting new tenants to the estate and has just completed the infrastructure for the country's first free zone which is approximately 25 hectares in size.[12] The port also has plans for a channel wide enough to handle two- way traffic, since the present handling capacity is at full stretch. Work is in progress to develop a larger container/cargo berth at the Northern end of the harbour to make it into a three berth facility with extra capacity for handling liquid products. PLIPDECO also has plans to establish a new container terminal on the Southern end of the harbour on reclamed land.

As noted, both ports pursued and are pursuing plans for development to increase revenue flows and in the case of the Port at Port-of-Spain to achieve financial self-sufficiency. In the period 1976-1987, facilities at the latter were developed for much higher volumes of traffic than what is being experienced at present.

Both ports have under-utilized capacity and plans for future development are being undertaken without any co-ordination. In fact, both ports are presently competing with each other for general cargo, both containerized and break-bulk and transhipment traffic. One important characteristic of the port industry of Trinidad and Tobago is the absence of a single body which can act as a regulatory body to rationalize, co-ordinate and sychronize the activities of the various ports both public and private. This also includes plans for the development of more facilities. This results in duplication and un-coordinated development particularly of the two afore-mentioned ports and a wastage of resources.

The operations of ports must be viewed in terms of its external environment. There is increased competition faced by ports at a regional and international level. The current trend is towards the creation of load-centres ports i.e. ships will call at one main port which will be responsible for transhipment of cargo via the use of feeder vessels. Ports in order to attract these mainline vessels have to increase their efficiency.

Additionally, in light of the technological changes that have taken place in the maritime industry, and its impact on port operations, this has placed a further demand on ports to increase their efficiency and minimize their operational costs. New cargo-handling techniques mean that labour productivity has increased and fewer labourers are required. The skills required are quite different from those formerly found among port workers. The pattern of employment therefore, has changed to one requiring fewer people with different skills, often in maintenance as well as operations.

The port costs incurred by ships generally lie in three forms:- cargo-handling, ships' time and ports' dues.

Ports have to examine their operational procedures to minimize these three components, thereby increasing their overall efficiency. An increase in ports' efficiency will have a positive impact on the users' of port services in the country e.g. the producers of the goods for export and the consumers of the imported commodities.

This will assist in increasing cargo flows to one's port. It will contribute to an improvement of the country's export competitiveness in international trade, and also its standard of living since the consumers of the goods will be paying less and consumption will thereby increase.

'The Economic function of an improvement in a seaport is to increase the producers' surplus of those who originate the exports passing out through it, and to increase the consumers' surplus of those who ultimately consume the imports passing in through it. It follows that a measure of the economic efficiency of a port is the aggregrate cost of passing cargo through'.[13]

3.3.4 PORT POLICY MEDIUM-TERM MACRO-PLANNING FRAMEWORK 1989-1995.

In light of the problems outlined, one needs to review the **Medium-Term Macro-planning Framework 1989-1995, pp. 282-285,** to examine the policy proposals for the port industry. One important proposal hightlighted was a need for determining the roles of the various ports, both public and private. The definition of the roles of the various ports will be determined, inter-alia by:-

(a)The geographical location of the ports;
(b)The functions of the ports in their natural hinterland;
(c)Cost and traffic considerations;
(d)The type and capacity of facilities, equipment and technology available at the ports; and
(e)The type and structure of the manpower/labour supply.

These factors will form the basis of any programme for the rationalization of the port industry.

Such a programme will have as its principal objective that each public port should operate at the highest level of efficiency and cost-effectiveness.

The plan has also noted one of the problems that has arisen in the port industry namely the competition between the two major ports of Port-of-Spain and Point Lisas, the duplication of port facilities which has lead to the under-utilization of cargo- handling capacity. It was therefore noted that the central thrust, must necessarily be the rationalization of activities at both locations to ensure complementarity and efficient allocation and use of the country's resources. In this context, rationalization of activities will focus on towage, dredging, equipment procurement and maintenance, technical assistance, research, navigational aids and documentation.

Due to the proliferation of private ports along the coast, there is urgent need for co-ordination of port development and operations and maritime traffic control in internal waters at both public and private ports.

To ensure optimal use and management of the port resources of the country it is recommended that all ports, both public and private of the country be responsible to a single authority. In this respect, it was recommended that a new and restructed National Ports Council be developed to assume responsibility for all the ports, instead of the existing Port Authority.

The National Ports Council should have as its main task the co-ordination of existing and future port development so as to ensure the most efficient allocation and use of the country's resources, natural and otherwise.

The plan also noted that a critical factor in port planning is a realistic forecast of the trend of the national economy, foreign trade sector and, as far as possible, a realistic forecast of cargo flows.

3.4 SHIPPING- INTRODUCTION

3.4.1 CHARACTERISTICS OF REGIONAL SHIPPING.[14]

To understand the scenario within which the regional shipping and national shipping companies operate and problems faced, one should obtain a brief overview of the characteristics of regional shipping. Given the ratio of imports and exports to gross domestic product, Caribbean countries are heavily reliant on maritime transport because of their dependence on foreign markets. The range of shipping services extend from highly sophisticated vessels with computer-controlled procedures to very poor, virtually unseaworthy craft engaged in local passenger-carrying and on-the-beach trading.

This transport involves three systems-: deep-sea(100 liner and bulk companies), short-sea(30 United States lines operate regularly on this trade in the Caribbean) and inter-island vessels. Even though each of these transport systems is directed towards different market segments, they do not operate in isolation i.e. there are areas of overlap.

For example, deep-sea and short-sea lines which call at two or more Caribbean islands offer inter-island transport services, and deep-sea operators offer direct and indirect or trans- shipment services between the Caribbean, North America and other continents. The ships vary from 1000 T.E.U. lo-lo to small 24 T.E.U. vessels. There are many types of Ro-Ros; massive triple deck barges carrying trailers as well as multi-purpose vessels.

In addition to these liners, there are small schedule bulk carriers and irregular tramps in short-sea operations. These carry timber, cement and grain. Overall, there is considerable over-tonnaging, although there are enclaves of small islands that receive few calls.

The vessels dedicated primarily to inter-island and island coastal services fall into two general categories. There is a range of steel-hulled ships of around 200-300 DWT which are mainly old coasters and river craft(and even old fishing trawlers) from Europe. Many of these are operated by a captain/owner and a crew of about six.

The second major category of inter-island vessels are the schooners. They range from about 30-60 tonnes and are wooden -hulled sailing craft, fitted with auxiliary engines. The inter-island services of short-sea vessels are not offered to a wide range of ports, hence inter-island vessels play an important role in the economies of the countries served. The range of cargoes is normally presented in different shipping units-: break-bulk, pallets, barrels, containers, bales, live animals and indivisible odd-sized units. Containerized cargo movements between islands are dominated by short-sea operators; that is short-sea carriers transport containerized inter-island cargoes which are compatible with their schedules, vessels and ports of call in order to enhance load factors and profitability. The inter-island vessels are therefore normally employed to transport cargoes that are non-containerized or between those islands which do not have short-sea services.

3.4.2 WEST INDIAN SHIPPING CORPORATION.[15]

As mentioned in Chapter II, the West Indies Shipping Corporation(WISCO) was established by Agreement among CARICOM states which entered into force on April 30, 1976. The regionally owned corporation operates three vessel cellular container ships, two owned and one chartered.

These make calls at Miami, Jamaica, St.Kitts, Antigua, Montserrat, Dominica, St Lucia, Barbados, St. Vincent, Grenada, Trinidad and Guyana; and also provide a linkage with transhipments from and to the National Shipping Corporation of Trinidad & Tobago (SCOTT) which operates to New York.

The West Indies Shipping Corporation(WISCO) has until now never made a significant impact on shipping in the region. This reason for this can be partially explained based on the operations of the lines i.e. short and deep-sea companies in the region; WISCO is one of the competitors in the short-sea trade. As indicated, the movement of cargoes between the Caribbean islands is conducted by virtually every category of vessel. These over-lapping activities create a very difficult trading environment for the regional line-(WISCO) which has a high level of contractual obligations to provide cargo links between islands on a regular basis at low rates. WISCO is operating in an unregulated environment, which has affected its ability to achieve profitability.

Additionally, WISCO's operations have been severely hampered by two constraints inherent to the corporation's make-up:-

(i)The corporation's financial/equity structure;and

(ii)The mandate to cover all CARICOM ports.

WISCO'S operations are financied by a Shipping Finance Fund and a Share Capital Fund. The contribution to the former is based on shares held by the member states, and is a function of WISCO's requirements for debt (deficient) servicing, capital expenditure, and on-going and developmental projects for the year of income.

The share Capital Fund was conceptualized to represent instalment payments on the initial issue or share capital for the corporation.

The above-mentioned financing structure may have contributed to a sense of complacency and even inefficiency on the part of the corporation, since the governments were prepared to finance its losses. Therefore from its inception the corporation was not mandated to operate as a commercially viable enterprise.

Additionally, WISCO was obligated to call at all CARICOM states which meant that the corporation was forced to service highly unprofitable port calls. While such a corporation could have an important role in the movement of intra-regional goods and services, the history of the operations of the corporation since its inception has been characterised by irregularity and inefficiency.

In an attempt to improve and update the corporation's financial and operating profile and thereby achieve viability the Standing Committee of CARICOM ministers responsible for transportation(SCMT) agreed to restructure the ownership of the corporation to facilitate investment by regional and foreign private sector equity partners, while providing interim financial arrangements for WISCO's continued operations.

An operational plan was approved for 1990-1991 which had a number of major elements namely:-

(i)Service profile:- The corporation should operate a ten-day mainline service and a flexible 18-30 day feeder service. Calls at Eastern Caribbean ports would be made only when such port calls were evaluated to be profitable.

(ii)Vessels-the mainline service would be operated by one owned vessel and one chartered vessel while a second-owned vessel should be utilized on the feeder service. The two owned vessels would be dry-docked at different times.

(iii)Containers:-the Corporation would undertake a container repair and buy-out programme so as to provide the corporation with an upgraded fleet of the required number of containers.

(iv)Management/Marketing:- The management and technical posts required to operate the three-vessel fleet and to support the move towards private sector equity participation and management after 1991 were identified identified. Its agency functions were to be contracted out and the corporation was to retain the services of a marketing manager and two sales persons.

(v)Financing-:The financing aspect of the plan was of particular importance since it outlined the immediate financial requirements of the corporation and thereby the contributions required from the member states without which the corporation may be forced to wind up operations. These financial requirements included payments to local and foreign creditors, dry-docking of two-owned vessels, severance benefits, re-organisation expenses and container repair and buy-out.

Recently, the corporation has been faced with an additional problem with respect to its ships namely:-

(a)CARICOM EXPRESS is in dry-dock and monies are required to meet these payments for this exercise.

(b)The CARICOM VENTURE and the M.V.SCOTT SURVIVOR were seized by creditors for non-payment of bills.

An interesting point to note about the restructuring plan is that it attempts to address internal constraints in the operations of the corporation, but does not outline a strategy for redressing the external market environment within which the corporation is expected to operate. Therefore the immediate challenge which faces the member states will be the expected role of the regional carrier in relation to Regional Shipping.[16]

3.4.3 CHARACTERISTICS OF NATIONAL SHIPPING.

Trinidad and Tobago's involvement in shipping can be sub-divided into three main areas namely:-[17]

i)Domestic Shipping- This refers mainly to the ferry service between Trinidad and Tobago and also some private coastal shipping and barge operations.

ii)Intra-Regional Shipping- This consists of:-

(a)The West Indian Shipping Corporation (WISCO) which currently operates three intra-regional ships in which Trinidad and Tobago is the major shareholder among several Caribbean countries(40%);

(b)Inter-island services provided by small vessels and schooners. These are owned by private owners.

iii)Extra-Regional Shipping- This consists of a number of steamship lines, all of which are foreign-owned and based and which serve the major trade routes between Trinidad and the United Kingdom/Europe, the United States and the Far East.

The Shipping Corporation of Trinidad & Tobago(SCOTT), a government state enterprise, has participated in the business of ocean transportation in all its fields, including extra- regional shipping.

With respect to the carriage of imports and exports, it should be noted that-:[18]

(a)A small proportion of this trade is carried by coastal steamers and inter-island schooners;

(b)Bulk carriage of oil(crude & refined) and sugar are carried by vessels of foreign corporations resident in Trinidad;

(c)Ammonia and urea are carried by the National Shipping Corporation;

(d)The liner carriage of imports, and to a lesser extent exports has been handled by several companies including the West Indies Shipping Corporation.

TABLE 3.4 reflects the total container & transhipment handled by local agents for the period 1988 to September 1991 at the port at Port-of Spain. A large percentage of the containers and transhipment boxes are handled by foreign shipping lines. The amount carried by SCOTT averages between one to five per cent of the total. With respect to WISCO, this represents 10 to 11% of the total.

3.4.4 SHIPPING CORPORATION OF TRINIDAD AND TOBAGO(SCOTT).

The shipping Corporation of Trinidad & Tobago was formed in 1981 with the acquisition by the Trinidad & Tobago government of Seatrains 49% share-holding in the company. The Company's mandate was to take care of government-related business as it pertained to the state's shipping needs.

From its inception SCOTT was to assist in the movement of crude oil, refined petroleum products, and later the transportation of petro-chemicals, fertilizers and other bulk commodities from those industries engaged in the production of ammonia, methanol and urea. Most of these industries are located at the Point Lisas Industrial Estate.

Additionally, it was proposed that provisions be made for nationals of Trinidad & Tobago to man vessels wherever possible, and to take over the total running of the enterprise when the necessary local managerial competence was gained. Therefore SCOTT was perceived as the vehicle for the development of a shipping capability in Trinidad and Tobago via training, and to make feasible the participation by the country in the transport of the major products of its export trade-a trade now dominated by foreign shipping lines.

However, the necessary mechanisms to ensure that these objectives could be met, were never implemented.

TABLE 3.4.

TOTAL CONTAINERS & TRANSHIPMENT BOXES HANDLED BY LOCAL SHIPPING AGENTS AT PORT-OF-SPAIN FROM 1988-SEPTEMBER 1991(T.E.U.'S).

AGENT.	1988	% SHARE. OF THE MKT.	1989	% SHARE. OF THE MKT.	1990	% SHARE.	JAN-SEPT. 1991	% SHARE. OF THE MKT.
i) ALSTONS SHIPPING.	4797	11.42	1862	5.9	2056	3.72	1605	2.7
ii)GLOBAL STEAMSHIP AGENCIES.	85	0.2	276	0.9	1665	3.58	831	6.4
iii)GORDON GRANT.	1155	2.75	739	2.3	867	1.97	1422	2.3
iv)GULF SHIPPING.	260	0.62	107	0.3	826	1.49	3980	6.73
v)HUGGINS SERVICES	1569	3.73	1410	4.4	5018	16.3	8043	23.36
vi)INDUSTRIAL & COMM. ENTERPRISES LTD.	28	0.07	-	-	-	-	-	-
vii)L.J. WILLIAMS LT	6903	16.43	4961	15.6	9551	16.5	7421	-
viii)LAZZARI & SAMPS	-	-	79	0.2	35	0.1	36	0.6
ix)MELVILLE SHIPPING	2995	7.13	2248	7.1	10009	62.92	16521	94.6
x)NAVARRO'S SHIPPING	1482	3.53	549	1.7	76	0.1	745	1.2
xi)NORTH AMERICAN. C'BBEAN AGENCIES.	-	-	-	-	4089	10.6	1039	1.7
xii)OCEANFREIGHT.	12	0.03	-	-	-	-	-	-
xiii)SEALAND SERVICE	6088	14.49	5836	18.4	9454	16.42	7880	13.19
xiv)SCOTT.	2385	5.68	2852	9	821	1.65	-	-
xv)T'DAD CONTAINER OPERATORS.	8546	20.3	6029	19	8620	18.22	9290	21.15
xvi)T'DAD MARINE AGENCIES.	1381	3.29	1033	3.2	1956	3.44	3707	14.32
xvii)WISCO	4330	10.31	3748	11.8	8245	43	-	-
TOTAL	42016	-	31729	-	63288	-	-	-

Under SCOTT's ownership and direction are four ships. SCOTT owns two methanol tankers, dedicated to the transport of methanol, which is produced locally for the world market. SCOTT also owns and manages one product tanker and a liquefied petroleum gas tanker. These ships are co-managed with a British firm and it is proposed that SCOTT will eventually undertake full management of the ships.

One of the initiatives undertaken by SCOTT in 1983 was the establishment of liner services for both U.K/Europe and North America. The latter was suspended in 1990, because of the increasing costs of chartering vessels.

Through the establishment of SCOTT the government appears to have recognised the importance of the need to exercise some control over the transport of its export cargoes. Given the establishment of an industrial infrastructure whose major purpose is to conduct trade, one should reduce attempt to reduce the country's dependence on foreign carriers to transport these cargoes. This could of particular benefit given the high cost of transport as a percentage of the overall cost of the goods.

Additionally, Trinidad & Tobago is signatory to the UNCTAD Liner Code. This code which has as its provisions a cargo-sharing formula i.e 40-40-20, allows a country to participate in the carriage of 40% of the goods of its trade. This provides the impetus for the establishment of a national shipping line, thereby allowing the shipping industry to play a tangible role in the development of the national economy.

Although SCOTT was given the mandate to carry government cargoes, at no time have there been formal instructions through legislation requiring state enterprises and utilities to nominate SCOTT as their carrier.

Nor has the above-mentioned code, or any form of cargo-sharing formula, been implemented which will allow SCOTT to become more competitive internationally. The latter is therefore operating in an environment whereby foreign shipping lines are at liberty to participate in the carriage of imports and exports, particularly the latter, by offering very low freight rates to the detriment of the company.

SCOTT commenced a restructuring programme in 1990 for a number of reasons. One of these appears being that the liner department was losing money. As a result, the North American route was closed and UK/Europe was maintained since less investment is required in manpower.[19]

If the national shipping company is expected to play a more viable role, it will be necessary for the government to re-examine its operations and develop a new strategy which will encompass:-

(a)Designating SCOTT as the national carrier.
(b)Encouraging exporters to utilize the services of either SCOTT or WISCO.
(c)To issue informal directives to state enterprises and public utilities to utilize the services of SCOTT.

3.4.5 SHIPPING POLICY- MEDIUM-TERM MACRO-PLANNING FRAMEWORK 1989-1995.

In the **Macro-Planning Framework 1989-1995,** it is stated that:

'The shipping industry is considered to be a crucial lifeline to the economic development of Trinidad and Tobago'(p. 282).

The plan also acknowledges some of the problems being experienced by the shipping industry in Trinidad & Tobago, which includes the sudden entrance by shipping lines from developed countries when business is good and their sudden departure when there is a downturn.

This phenomenon has resulted in the fluctuation of freight rates, the unreliability of shipping services and the resultant effects on manufacturers and consumers.

The plan also refers to the recognition by the state of the need to develop a shipping capability, and in this regard the state has invested in the SCOTT with 100% share ownership and in WISCO with 40% share ownership, being the majority shareholder. It further noted that, in the past competition between these two companies has not proven to generate any substantial degree of economic/financial benefits. Given the extent of shareholding by the state in both companies, and the need to enhance existing shipping capability in Trinidad & Tobago, co-operation between SCOTT and WISCO is critical. To further develop this capability the following objectives will be pursued namely:-[20]

(a)In the light of the financial interest which the state has in both SCOTT and WISCO, subject to financial, logistic and efficiency constraints and negotiated agency agreements transportation of state-owned cargoes will be done by these lines;

(b)The establishment of a National Shippers' Council in order to ensure that freight rates charged (not only by SCOTT and WISCO, but other lines visiting Trinidad & Tobago on a regular basis) are consistent and equitable;

(c)The Caribbean Fisheries Training and Development Institue will be expanded to include maritime training with particular emphasis being placed on the training of ratings and cadets. Cadets will be sent to the Jamaica Maritime Training Institue for officer training; and

(d)Scholarship and student loans will be offered for courses in maritime subjects at approved maritime institutions both nationally and internationally.

CONCLUSIONS.

This chapter has outlined the problems that are faced by the port and shipping industries of the maritime sector, and the policies that have been enunciated for these sectors in the Macro-Planning Framework. Yet, the inter-relationship between these policies and the problems are not clearly identified. Nor are these problems seen in their wider perspective, i.e. it has not addressed the external constraints (regional and international) within which the industries are forced to operate.

Based, on the problems that have outlined, it is necessary to developed clear goals and objectives, which can be used as inputs to develop policies for the sector. The goals and objectives must not be narrowly-defined, and should take cognisance of the other components of the maritime sector e.g. marine environment.

A number of options should be examined to determine the most feasible in light of the problems outlined. Chapter VI, will explore a number of options that can be pursued by the shipping and port industries.

NOTES AND REFERENCES.

1. There are four main ports, but the fourth at San Fernando is not utilised presently because of its poor state.

2. Goss R.O., Professor, Economic Policies and Seaports; Maritime Policy & Management, 1990, Volume 17, No.3.

3. Sea & Air Transport- Handbook of Trinidad & Tobago.

4. Ibid, pp. 32-38.

5. Port Authority of Trinidad and Tobago- 'Looking towards the year 2000'.

6. Port Authority of Trinidad & Tobago (1988)- " Strategic plan 1989-1993 "- prepared by E.R. Doyle.

7. Planning & Research Department- Port Authority of Trinidad & Tobago.

8. Public Utilities Commission(1988)- Statistics of the Public Utilities.

9. Port Authority of Trinidad & Tobago- 'Looking towards the year 2000'.

10. Port Authority of Trinidad & Tobago- 'Port-of-Spain Waterfront Development Plan.'

11. Officer in Charge Port & Marine Affairs (PLIPDECO)-Letter dated 22 July 1992.

12. Sea & Air Transport-Handbook of Trinidad & Tobago-1990/1991.

13. Goss, R.O., Economic Policies and Seaports; Maritime Policy & Managment, 1990, Volume 17, No. 3.

14. ECLAC (United Nations Economic Commission for Latin America and the Caribbean), Caribbean Short-Sea Transport-Its role, challenges & opportunities.

15. Adapted from a paper on a review of the operations of the West Indian Shipping Corporation prepared by the Maritime Services Division(Trinidad & Tobago).

16. Please note that the regional shipping Corporation was dissolved at the end of December 1991, and a new company has been created titled 'Caribbean General Maritime Ltd'. The partners in this company comprises of a French ship-owner(who already has a number of lines in the Caribbean), an American shipowner, a number of private interests and some of the Caribbean states of the Caribbean Community(CARICOM).

Source of information :-

(i) " La C.G.M. sur la voie De CARICOM", Le Marin, 10 July 1992.
(ii) " Le naufrage de la WISCO" ._____.
(iii) " C.G.M: project de filiale et deux nouveaux services dans les caraibes", Le Journal de la Marine Marchande, 26 June 1992.
(iv) "C.G.M./Caraibes- le succes d'une nouvelle strategie",_____, 14 August 1992.

17. National Transportation Policy Project (Draft Final Report) Volume IID- Marine Sector & Trinidad and Tobago Services, pp. 23-7 to 23-9.

18. Inniss, A.,(1991)- 'The role of shipping in a developing economy'. MSc. Diss.

19. Interview with Technical Manager (Jan. 1992)- Shipping Corporation of Trinidad and Tobago(SCOTT).

20. National Planning Commission (Sept. 1990), Medium Term Macro-Planning Framework 1989-1995.

CHAPTER FOUR

MARINE ENVIRONMENT AND MARITIME SAFETY

4.1 INTRODUCTION

This chapter has been divided into two sections, which will focus on the major marine environment and maritime safety problems currently experienced in the waters surrounding Trinidad and Tobago. It is important that the policy that is defined for the ports and shipping industries be developed with due regard for its implications for the marine environement and also maritime safety.

4.1.1 CHARACTERISTICS OF MARINE POLLUTANTS.

Marine pollution has been defined as "the introduction by man, directly of substances or energy into the marine environment including estuaries, resulting in such deleterious effects as harm to living resources, hazards to human health, hindrance to marine activities including fishing, impairment of quality for use of sea water and reduction of amenities".[1]

In a paper titled ' **Water quality management in the Caribbean**' by R.A Williams and Terrence Thompson, the number of pollutants entering watercourses were indentified. These were divided into three broad categories namely:-

(i)Organic matter(including pathogens) e.g. sewage, animal wastes, industrial wastes.

(ii)Toxic Chemicals -Industrial wastes, pesticides, oil and salt intrusion.

(iii)Physical Nuisances-silt and solid wastes.

The sources of these pollutants can basically be classified as either point or non-point sources.

Point sources are discrete "end of pipe" discharges such as industrial and municipial discharges. On the other hand, non-point sources exert an impact over a diffuse area, and include industrial, municipal and agricultural sources. Waste characteristics i.e. mass rates and pollutant concentrations are more difficult to determine from non-point sources than from point sources.

The effect of a pollutant discharge to a water body depends on the characteristics of the discharge and natural characteristics of the water body. Organic pollutants as well as some inorganic pollutants and many micro-organisms are degraded by natural self-purification processes within the water body, so that their concentration reduces with time. The rate of decay of these pollutants is a function of the particular pollutant, the receiving water quality, temperature and other environmental factors. Yet many inorganic chemicals, such as heavy metals are not affected by natural processes.[2]

4.1.2 MARINE ENVIRONMENT OF TRINIDAD AND TOBAGO.

Trinidad & Tobago witnessed the growth of a number of light and heavy industries in its thrust towards economic development and growth. The abundance of oil and natural gas also led to the establishment of a number of industries to exploit these natural resources. However, like most countries of the world, the legislative, administrative and regulatory mechanisms were never extensively developed to deal with the by-products of these industrial processes.

A report of a cabinet-appointed Committee to plan a sustained programme to clean up major rivers and waterways in Trinidad & Tobago, identified a number of categories of pollutants in rivers and waterways as follows:-[3]

(i)Animal wastes-faeces and also wastes from meat processing plants.

(ii)Sewage-Human body wastes.

(iii)Oil-crude oil and used lubricating oils.
(iv)Pesticides- herbicides and insecticides.
(v)Silt and Solid waste-soil and garbage.
(vi)Salt water intrusions-inland movement of sea-water.
(vii)Industrial Wastes-manufacturing and industrial.

4.1.3 BRIEF REVIEW OF THE ABOVE-MENTIONED PROBLEMS.

(a)Animal Wastes-Only a small amount of this waste is used as fertilizers. Unfortunately, the waste from animal farms e.g. pig and poultry and food and beverage industries are allowed to enter watercourses directly or it is dumped on lands, causing environmental pollution and water contamination. The resultant high organic loading in many of the country's major rivers results in a depletion of oxygen, particularly in the dry season when river water flows are low.

(b)Sewage-The population is served by central sewage and packaged treatment plants. Central sewage treatment systems serve only three areas of the country namely Port-of-Spain and its environs, San Fernando and Arima. Other settlements rely on septic tanks and packaged treatment plant systems. Many of the latter are not properly maintained, and most of these wastes find their way into rivers, streams and the sea. Some attempts have been made to rectify some of these problems.

(c)Oil-Crude and used lubricating oils- contributes to oil pollution is of two types namely chronic and acute. Waters around Trinidad and Tobago have been classified as a high risk zone for oil pollution. Within the Gulf of Paria alone, there are some 42 marine platforms, 161 km of pipelines and heavy tanker traffic.[4] Chronic discharges have been identified as the most damaging in Trinidad. The areas most affected are the rivers and streams of South Trinidad.

The major ones being the Guaracara, Silver Stream and the Godineau rivers and their Tributaries. Near-shore waters of the entire Gulf of Paria and the South-East coast of Trinidad are also contaminated with petroleum hydrocarbon residues.

The major problems in Trinidad & Tobago now caused by oil pollution are contamination of water for agriculture and domestic use, harm to aquatic life, including commercial species of fish, and reduction in amenities.[5]

(d)Pesticides:-The importation of organochlorine and other persistent pesticides have been banned from general use in Trinidad & Tobago, since 1979 under the Pesticides & Toxic Chemicals Act. Although there is no regular monitoring of inland waters from pesticide contamination, all available evidence indicates that it may not be a chronic problem. Accidental poisoning of aquatic life is reported, however, from time to time due to disposal of the chemicals from homes and spraying of agricultural crops close to the river bank.

(e)Silt and Solid Wastes:-Perennial flooding problems exist due to silting and obstruction of waterways by soil and garbage, removal of hillside vegetation and poor land-use management. The latter are the result of the activities by slash and burn farmers, squatters and poor quarrying management. The lack of enforcement of the Litter Act is a contributing factor to the garbage problem. If garbage is dumped into watercourses and rivers and allowed to accumulate, eventually it impedes and obstructs the free flow of water. The water overflows its bank and causes flooding of nearby towns and villages.

Areas experiencing problems from quarries include Guanapo and North Oropouche.

Farmers are unable to use the polluted water for irrigation and during the wet season, widespread flooding is encountered. Outflows of rivers in the Caparo catchment affect Montrose, Longdeville, Todds Road, Caparo, Mamoral, Brasso Piedra and Flanagin Town.

Another impact is the deposition of garbage on beaches which have been washed down rivers and into the sea.[6]

(f)Salt Water Intrusions(inland movement of sea water)-Salt water intrusion has the potential for causing serious damage to agricultural lands situated in low-lying areas near to the sea. Salt water intrusion into the Oropouche lagoon has made lands once used for rice growing unsuitable for agriculture. Sluice gates on the Godineau river are now non-functional and salt water is allowed to flow unimpeded into the river. There is a need to co-ordinate agricultural irrigation and flood control activities.[7]

(g)Industrial Wastes:-Industrial wastes can be divided into organic biodegradable and organic persistant. This comes from industries engaged in both light and heavy manufacturing. The type of waste that is biodegradable should be treated at source. Organic wastes released untreated into waterways produce high organic loadings which cause anoxic conditions to develop, highly toxic hydrogen sulphide gas is then produced as a result of anaerobic respiration. During the dry season these conditions are accentuated. The lower reaches of the Caroni River, Couva and Cipero rivers are examples of rivers highly polluted by industrial bio-degradeable organic wastes. This contributes to mortality of fish and aquatic life.[8]

The environmental problems in Tobago are not as severe as in Trinidad.

This can be attributed to the slow pace of industrial development and to the fact that most of the oil operations are carried out in the waters of Trinidad. However, while there is no risk from the oil industry, oil is transported by barge to the island and then piped ashore by lines at the South-Western tip of the island. This, however, raises the question of possible barge accidents or leaks being disastrous to the Buccoo Reef, Bon Accord Lagoon, bathing beaches and hotel sites at Milford, Crown Point and Pigeon Point.

In Tobago, dumping of garbage has been identified as one of the causes of the pollution of the rivers in Tobago. Sewage, on the other hand, is a major concern for most of the southwestern areas of Tobago from Scarborough to Crown Point, since there is a lack of a central sewer system. Although it is proposed that a Scarborough sewerage treatment system will be commissioned in 1992, this will cover only the town of Scarborough and some of its environs. However, the rest of the rapidly growing southwest will be still far away from receiving such a system.[9]

One can deduce therefore from the aforementioned that the environmental integrity of the rivers, waterways and coastal region is seriously threatened. See Annexes 1a and 1b which depicts the main rivers, waterways and coastal regions of Trinidad & Tobago. It is therefore necessary to examine the status of environmental management in Trinidad & Tobago particularly as it relates to marine pollution.

4.2 STATUS OF ENVIRONMENTAL MANAGEMENT IN TRINIDAD & TOBAGO.

In the **Draft Medium-Term Macro-Planning Framework,** the tourism sector has been identified as one of the growth sectors of the economy.

In addition, plans have been identified for the promotion of the agricultural sector including fisheries.

The Gulf of Paria provides some of the most productive commercial and recreational fishing grounds in the area and is used by fishermen, not only from Trinidad, but also, from neighbouring Venezuela. Fishing is particularly good all along the central and Southern Gulf region, particularly between San Fernando and Icacos. Because of its protected location, it is possible to participate in a number of recreational activities such as sailing, swimming, and wind-surfing. The major industries in the country are located along the Gulf Coast of Trinidad, as are all the major ports of the island. There are also numerous housing developments either planned for, or in the process of being constructed along the Gulf coast.

In Trinidad, the mudflats are located on the shores stretching from the Caroni Swamp to Pitch Point-La Brea, while along the shores can be found coastal wetlands, the most well-known of which is the Caroni, South Oropouche and Roussillac Swamps.[10]

Results of studies conducted by the Institue of Marine Affairs during the last 10 years show that coastal areas close to river mouths do show signs of contamination. Toxic chemical discharges come from several sources and are contributing to the pollution of the coastal waters of the Gulf of Paria. The Diego Martin, Maraval, East Dry river and St.Ann's and Caroni rivers, all show elevated levels of trace metals in sediments at their river mouths. The Point Lisas inshore areas are also contaminated with pollutants.

On the Oropouche Bank off San Fernando and particularly in Guapo Bay, petroleum hydrocarbons are predominant in sea floor sediments.

Faunal composition and population are much reduced here compared to other areas of the Gulf.[11]

With the present objective of the development of the other sectors whose viability is dependent on an unpolluted marine environment, it is necessary to develop strategies and proposals to redress the pollution problems of the water-ways and rivers, to satisfy the various conflicting uses of these resources.

The marine environment has many uses which can be identified as follows:-

(i)Fish Propagation/Harvesting.
(ii)Shellfish propagation/Harvesting.
(iii)Swimming.
(iv)Waste Disposal.
(v)Cooling Water
(vi)Drinking Water.
(vii)Ecological Life support system
(viii)Transportation
(ix)Sea-bed mining.
(x) Hydrocarbon Exploration.
(xi) Aesthetic.

In dealing with its environmental problems, the country has to examine the present legislative and administrative framework as it relates to the marine environment.

4.2.1. LEGISLATIVE FRAMEWORK

In the case of the former it should be noted, that there are a number of laws dealing with pollution prevention in rivers and waterways, some of which however are inadequate, out-dated and whose scope of coverage are limited.

Some of the legislative problems in this area are as follows:-[12]

(i) **The Oil Pollution of Territorial Waters Act, Chapter 37:03 (Act 25 of 1951)** makes " provisions against the discharge or escape of oil into the waters of Trinidad and Tobago". This provides that the owner or master of any vessel causing or allowing oil to escape into the waters of Trinidad & Tobago is liable on summary conviction to a fine of $10,000(TT) and imprisonment for twelve months. This however, does not allow for the offence to be dealt with other than by the judiciary process and thereby can result in delays to ships. Additionally, the focus of the act is on the owner or master, instead of the vessel, as is customary in maritime law. If the vessel is made the offender, it can be arrested, and it will be possible to recoup costs. An additional weakness of the act is that it fails to deal with oil pollution of the territorial waters caused by refinery operations and other land-based sources; nor have amendments been made to include pollution from off-shore installations. The country is not a party to the International Convention for the Prevention of Pollution from ships 1973/78(MARPOL), which means that there is no mechanism in their national legislation to control the discharge of pollutants e.g garbage, oily wastes by ships into the waters of Trinidad & Tobago.

(ii) **The Town & Country Planning Act, Chapter 35:01** provides only for planning use of land resources. There are no regulations in this Act for dealing with Environmental Impact Assessments. Because of the lack of former, it is difficult to estimate the environmental consequences of any proposed project.

(iii)**The Anti-Litter Act of 1973** deals with the prevention of illegal dumping of solid wastes into watercourses. Enforcement however of this act has been left to the Police, Public Health Inspectors and Voluteer Litter Wardens. The enforcement of this act is just an additional activity to their main activities. In addition, there are a number of delays when matters go to Court; cases are sometimes postponed over 20-30 times, before being thrown out. This means that illegal dumping, with its negative affect on rivers and watercourses, continues to a large extent unabated.

(iv)**The Petroleum Act, Chapter 62:01** is an act to consolidate and amend the law relating to petroleum so as to make better provisions for the exploration for, and the development and production of petroleum, and for matters consequential or incidental thereto.

As stated, there are two major sources of oil pollution chronic and acute. The former has been the subject of a study by the Ministry of Energy who has recommended a number of guidelines based on a '**Report of the team appointed to review the problems related to chronic oil pollution in the petroleum industry and to prepare draft regulations on oil and grease limits-1988/89'.** These guidelines are to ensure that petroleum companies conduct their operations in such a manner that the environment(both land and marine) would not be adversely affected by the quantity of oil and grease pollutants emanating from their operations.

The Committee developed draft guidelines for oil and grease limits, which it is proposed would be adopted as regulations under the **Petroleum Act(1969) Chapter 62:01.**

(v)With respect, while there is an original Quarries Act, it needs to be up-dated to make provisions to regulate the operations of quarries to prevent the pollution of rivers and waterways. In this regard, there is a draft bill entitled the **'Mines, Borings and Quarries(Amendment) Act 1987** to replace the original act. As mentioned earlier, the silt from the operations of the quarries contributes to the flooding of the rivers and waterways.

4.2.2 ADMINISTRATIVE FRAMEWORK.[13]

There are a number of ministries/agencies with responsibilities for the environment. However, there is no central body with responsibility to co-ordinate the activities of all these various ministries/bodies. The latter includes the Ministries of Finance, Planning & Development, the Town & Country Planning Division, Energy, Works & Transport, Industry & Enterprise, Forestry and Fisheries Divisions, National Security (Coast Guard), and the Office of the Prime Minister. Especially established units include-Institue of Marine Affairs (established via Institue of Marine Affairs Act No. 15 of 1976), the Solid Waste Management Company and the Caribbean Industrial Research Institue(CARIRI).

A number of studies have undertaken with respect to the status of environmental management in Trinidad & Tobago. One of the more significant ones was a report titled **'Guidelines for Environmental Administration in Trinidad & Tobago'**-prepared by the Standing Committee on the Environment. This committee was established to examine the major issues as it pertained to environmental management in Trinidad & Tobago. The former recommended a number of key proposals for the development of an environmental framework namely:-

(a)The establishment of a broad national environmental policy;

(b)The creation of a National Environmental Authority to co-ordinate all environmental management in the nation;

(c)The enactment of a broad National Environmental Act giving specific legislative Authority and responsibility to move forward to protect the environment.

The Standing Committee developed two key pieces of legislation titled **"Draft Environmental Protection Policy Act"** and secondly, a draft **"Prohibition and Control of Pollution Act"**. This draft legislation provides a strong foundation for improving environmental management. An environmental division has now been established in 1992 under the Ministry of Planning and Development.

In the **Draft Medium-Term Macro-Planning Framework-1989-1995,** there is no mention of an environmental policy for Trinidad & Tobago. However, a number of environmental objectives have been outlined under the general heading of tourism policy. It was stated in the above-mentioned plan that:-

"Particular attention will be given to ensuring that tourism development adheres to the objective of the preservation of the environment. Sound environmental management practices will be emphasized to safeguard the delicate balance of the environment. This is applicable for example to the Buccoo Reef, an irreplaceable natural asset. Developers will be expected, for example, to take the necessary precautions to avoid the destruction of historical sites and the damaging of the environment by indiscriminate disposal of effluent. Likewise, tourist attractions such as the bird sanctuaries, the Wildfowl Trust, and Asa Wright nature Centre will be vigorously protected against vandalism and abuse by visitors"(p. 99, paragraph 16.15).[14]

4.3 MARITIME SAFETY.

4.3.1 INTRODUCTION.

On a global level, there is an increasing awareness by countries both developed and developing to improve maritime safety particularly as it relates to the safety of shipping thereby minimizing the lost of life and property, and the additional dimension of protecting the marine environment from the harmful effects when these marine accidents occur.

In this regard, the International Maritime organization has developed inter-alia a network of technical rules, codes and regulations for the design and construction of ships. These have in most cases been made mandatory for signatory by countries by their incorporation into protocols and conventions.

As stated in previous chapters, Trinidad and Tobago is a maritime nation, and the seas, in addition to the facilitation of trade, provide a source of recreational and leisure activities.

In addition, there are a number of proposals to further develop the country's fisheries resources and tourism sector. A ship collision which may result in the discharge of crude oil-or refined product could have a detrimental effect on these resources. This is of particular significance, since a number of tankers utilize the sea lanes near to the islands. Trinidad and Tobago are situated in a region which is heavily plyed by oil tankers on their way to and from refineries of the Caribbean region and the Gulf of Mexico.

Some of the most used routes lie between Trinidad & Tobago, in what is known as the Trinidad & Tobago channel, or pass, which brings this threat very near to the islands.

There are also those tankers which call regularly at the refineries on the West Coast and the production fields off the South-East coast of Trinidad, placing almost the entire coastline of the island at risk. The coastlines of both islands are therefore extremely vulnerable to pollution from a maritime casualty because of the fishing resources, nurseries, coastal wetlands, coral reefs, bathing beaches, wildlife sanctuaries and other amenities are all found along these coasts.

4.3.2 MARITIME SAFETY IN TRINIDAD & TOBAGO

In Trinidad and Tobago, the Shipping Act No. #24 of 1987 made provision "for the registration and licensing of ships, matters relating to crews, safety of life at sea and matters incidental thereto". The act, as mentioned, led to the establishment of the Maritime Services Division, which is responsible for the regulation and development of safe shipping wherever they may be and all foreign ships within the waters of Trinidad and Tobago.

Although, there are a number of regulations still to be developed, this is an attempt to create a legislative framework to improve maritime safety.

The national merchant fleet consist of 22 vessels of 13,000 gross tonnage.[15] The former may be defined as commercially operated vessels owned by nationals or national companies, including motor launches, offshore supply vessels and tugs, fishing vessels and trawlers, as well as vessels over 24 metres. Some of these vessels include passenger and cargo vessels operating in the Caribbean and Central American area. With respect to maritime safety, the problems pertain to the operations of the national fleet and the inter-island schooners and vessels which ply between Trinidad and Tobago and the other islands of the Caribbean region. The former are old and small or a combination of both.

In Trinidad and Tobago, many seafarers despite repeated warnings, proceed on fishing, leisure or other expeditions without having the basics in safety or communciation equipment, even though possession of such equipment can either assist in sustaining life or in contacting help when the seafarer encounters difficulties.

However, it should be noted that both inter-island ferries i.e. **MF PANORAMA and MV TOBAGO** were constructed under SOLAS requirements. In addition the Maritime Services Division is in the process of registering and licensing ships in an attempt to improve safety standards.

Additionally the safety of the ferries is continually being improved, since specific guidelines are given to the Port Authority of Trinidad & Tobago(PATT) concerning cargo stowage on these ferries.

The Coast-Guard is responsible for search & rescue in Trinidad & Tobago. One of the problems currently being experienced is lack of equipment, since they possess just one aircraft for these operations. Additionally four helicopters are also used which however belong to the Ministry of National Security. The former has certain limitations in this respect since they are limited in range. The Coast-Guard utilizes the services of the national carrier to assist in search & rescue, which will report to the former any incidents at sea.

The Coast-Guard is presently decentralizing its search & rescue operations to four bases located throughout Trinidad & Tobago. Additionally, it is proposed to develop an auxiliary coast-guard unit consisting of fishing vessels and pleasure craft to assist also in search & rescue.

As mentioned in Chapter 111, the inter-island vessels fall into two general categories, namely steel-hulled ships(old coasters and river craft), and inter-island schooners.

The major problem with these vessels is that they are normally very old, in poor condition and carry few, if any, items of safety equipment. A contributing factor to this problem is that these small scale owners derive low rates as earnings for ships which makes it difficult for them to maintain their craft. However, the island marine authorities are still obliged to apply minimum standards of safety.

The implementation of these standards, however, could put many vessels out of business with consequences for many neighbouring islands nations, especially the remoter and poorer areas of the groups, such as the Grenadines and other scattered small islands which depend on these vessels.

Maritime safety requires co-ordination at international, regional and national levels. With respect to the regional dimension, in an attempt to improve maritime safety, particularly with regards to the operations of these inter-island vessels, an agreement on Port State Control has been concluded between the Maritime Services Division of Trinidad & Tobago, and the Maritime Safety Authorities in St Vincent & the Grenadines and in Grenada.[16]

This will involve like most Port State Control procedures, an inspection of the vessels which call at Trinidad & Tobago ports to ensure that they are up to the required safety standards.

This is an attempt to foster greater co-operation on maritime safety regulations with smaller island states whose vessels call frequently in Trinidad & Tobago.

In the **Medium-Term Macro-Planning Framework 1989-1995,** there is no reference to the issue of maritime safety. Given the increased emphasis at the international level on maritime safety, and the vulnerability of the country's coasts, one may have expected some broad objectives and policies to have been incorporated in the section on shipping.

The world is approaching the 21st century and the present practices of economic development cannot continue apace if the needs of the future generations are to be met. Trinidad & Tobago, like most countries of the world, should develop proposals and strategies to satisfy the demands of the conflicting users of its limited marine resources. A critical element is mitigating, and to the extent feasible, eliminating the harmful effects of activities on its marine environment thereby ensuring its preservation and conservation.

Given, the detrimental effects on the marine environment in the event of a collision at sea, it is necessary that broad policies and goals be developed on the subject of Maritime Safety. This should embrace action to be undertaken at national, regional, and international levels.

Chapter Vl will examine options to be pursued towards the development of policies on marine environment and maritime safety.

NOTES AND REFERENCES.

1. Report of the UN Conference on the Human Environment-Document A/Conf. 48/14, July 3, 1972.

2. Williams R.A. & Thompson T., 'Water quality management in the Caribbean pg. 39'. Ministry of Environment & National Service, Rivers & Waterways - Our business protecting the marine environment, June 6-7th 1990.

3. Report of the cabinet-appointed committee to plan a sustained programme to clean up major rivers and waterways in Trinidad & Tobago-July 1991.

4. Suing-Chang A.,(1988). " Environmental assessment of marine pollution and coastline degradation in Trinidad & Tobago".

5. Report of the cabinet-appointed committee to plan a sustained programme to clean up major rivers and waterways in Trinidad and Tobago-July 1991, pg. 10.

6. Ibid, pp. 10-12.

7. Ibid, pg. 13. Please note that several rivers of Trinidad are influenced by tidal movements resulting in salt water moving inland, and during the rainy season when flood waters are high causes a mixing of fresh and salt water, and this eventually floods the land. For example in South Trinidad- the Oropouche Lagoon-salt water comes inland through the Godineau River and its tributaries are salted.

8. Siung-Chang, A.(1988). " Environmental assessment of marine pollution and coastline degradation in Trinidad & Tobago".

9. Tobago House of Assembly Works Division, 'Rivers and waterways in Tobago', pp. 31-34. Report of the cabinet appointed committee to plan a sustained programme to clean up major rivers and waterways in Trinidad & Tobago.

10. Coastland wetlands and mudflats are important nursery and breeding grounds for many commercially important fish species. They also act as buffers between the marine and land environments, trapping sediments that might be washed out to sea, and protecting the shoreline from erosive wave action.

11. Chang-Siung, A. "River pollution problems in Trinidad & Tobago", pp. 61. Ministry of Environment & National Service, Rivers & Waterways- Our Business Protecting the Environment June 6-7th (1990).

12. Panel discussion on "Existing administrative and legislative controls for the prevention of pollution in the rivers and waterways of Trinidad and Tobago". Rivers and Waterways- our Business Protecting The Environment. IBID.

13. James, C., 'Guidelines for environmental administrationin Trinidad & Tobago', prepared on behalf of the Standing Committee on the Environment.

14. Restructuring for Economic Independence-Medium Term Macro-Planning Framework 1989-1995.

15. The Trinidad & Tobago Maritime legislation and practices for merchant seafarers, Caribbean Regional Seminar on Maritime Labour Standards- Jamaica, December 9-13, 1991., pg. 3.

16. This is a very recent initiative that was introduced in 1991 between the maritime authorities of the respective countries Port state control will be applied to ships from Trinidad & Tobago, St. Vincent & the Grenadines and Grenada. In addition to port state control, this agreement also covers other items relating to maritime safety e.g casualty investigations, disputes and tax and duty on maritime safety equipment.

CHAPTER FIVE

REVIEW OF THE MARITIME SERVICES DIVISION.

5.1 INTRODUCTION

As mentioned in Chapter 11, the Shipping Act No. #24 of 1987 made provisions for the the establishment of a Maritime Services Division. Consequently, in March 1988, a Committee appointed by the Cabinet submitted a report recommending the staffing and structure of the Division. These recommendations, inclusive of a proposed organizational structure, were agreed to by the Cabinet on 15 April, 1988.

The Shipping Act No. #24 of 1987 provides the framework for the functioning of the Division.[1] The latter, which is presently under the portfolio of the Ministry of Works and Transport is to function essentially as a Maritime Safety Administration deriving its functions from the act.

5.2 ROLES AND FUNCTIONS.

The Cabinet appointed Committee identified the functions of the division as follows:-

(a)To provide for the registration and licensing of Trinidad & Tobago ships leading, inter-alia, to adequate provision being made for the safety of ships, passengers and crew and for adequate accountability and compensation in the event of mishaps;

(b)To provide a mechanism for the application of the standards reflected in International conventions, codes and guidelines within the national maritime sector in the local as well as the international context, and to formulate strategies to cater to the development of appropiate national maritime expertise to enable such standards to be effectively implemented and maintained;

(c)To provide and maintain an appropriate network of navigational aids, and an effective system of promulgation of navigational warnings and notices to mariners to ensure the safety of ships;

(d)To determine the minimum manning levels of the different categories of ships and to provide for the examination and certification of seafarers;

(e)To provide for the registration of seamen, their engagement, conditions of service and the settlement of industrial disputes arising therefrom;

(f)To enquire into the circumstances and causes of shipping casualties and to penalize infringements of the Shipping Act 1987 and/or make appropriate recommendations for ensuring non-recurrence or minimization of casual factors;

(g)To survey ships of all types, to ensure compliance with standards of safety and seaworthiness as required under the Shipping Act of No #24 1987 and to deal with the issue of statutory certificates;

(h)To inspect and survey ships and cargoes, to ensure compliance with loading and stability requirements and to monitor safety standards in general;

(i)To deal with the receiving and disposal of wreck, including removal or breaking up of sunk, stranded or abandoned vessels;

(j)To deal with salvage matters;

(k)To implement and maintain standards regarding the carriage by sea and storage of dangerous goods and cargoes; and,

(l)To provide services for matters, relating to the above.

Professor P.S. Vanchiswar in his paper titled **'ESTABLISHMENT/ADMINISTRATION OF MARITIME AFFAIRS'** with particular reference to developing countries, outlined the role and functions of a Maritime Administration, which can be more extensive that the executing of its regulatory function. These are as follows:-

(a)ADVISORY-Formulation of policy i.e.suggesting/drafting such policy for consideration and approval at the political level.

(b)ADMINISTRATION-specialised executive arm of the government as regards maritime matters i.e. shipping, ports, seafarers and related matters. Therefore it has(i)to discharge its administrative functions as any other administrative unit of the government following the administrative and financial rules and procedures (ii)to carry out the mandated, specialised functions(regulatory and developmental promotional pertaining to the administration of maritime matters either from within or under the ministry concerned.

(c)REGULATORY-Safety of lives, ships and property and protection of the marine environment.

(d)DEVELOPMENTAL/PROMOTIONAL-This will include the appropriate analysis/assessment of the most suitable types and numbers of ships required to meet the scale of development planned, development of the man-power needs of the shipping industry, the development of the ship-building and ship-repair capabilities, and marine ancillary services.

From the above-mentioned functions as defined in the Shipping Act No. #24 1987, indicates that the Division was seen primarily as the conduit for the discharge of the regulatory aspect as it relates to maritime safety.

Normally, a maritime administration has two responsibilities with respect to safety at sea and also pollution prevention. This, generally, applies to its own ships and foreign ships arriving at its ports. The former involves flag state control, and the latter port state control. Based on the availability of resources e.g manpower and the number of ships, the both aspects can be undertaken by the maritime safety administration or it can consider delegating some of the work to the Classification societies. It is the normal practice in most countries to allow the Classification societies to assume some of the work necessary for the country's own ships, while the port state and general inspections are conducted by the maritime administration. However, it should be noted that the ultimate responsibility for the safety of all ships remains with the maritime administration.[2]

A review of the organizational structure and its recommended staffing indicates that there is some recognition of the personnel that is necessary for such a unit to discharge this function effectively.

Provisions have been made for the following key posts in the Division. Some of these are as follows:-

(1)Director and Deputy Director of the Maritime Services Division.
(2)Registrar of Ships
(3)Maritime Surveyors.
(4)Maritime Inspectors.
(5)Administrative Officers.

See Figure 5.1 which represents the organizational chart of the Division.

5.3 OPERATIONAL CONSTRAINTS.

As stated in chapter 11, this Division is under the portfolio of the Ministry of Works and Transport, a ministry with a multitude of responsibilities as it pertains inter-alia to the infrastructural development of the country's transportation network (air, sea and land), in addition to the maintenance and construction of buildings. Unfortunately, what emerges in these situations is that those units that are more visible to the population normally are the focus of attention and obtain greater priority, particularly if there is competition for limited resources of a financial nature. This is made more crucial when viewed also at a macro-level with competition from other ministries such as Health and Education.

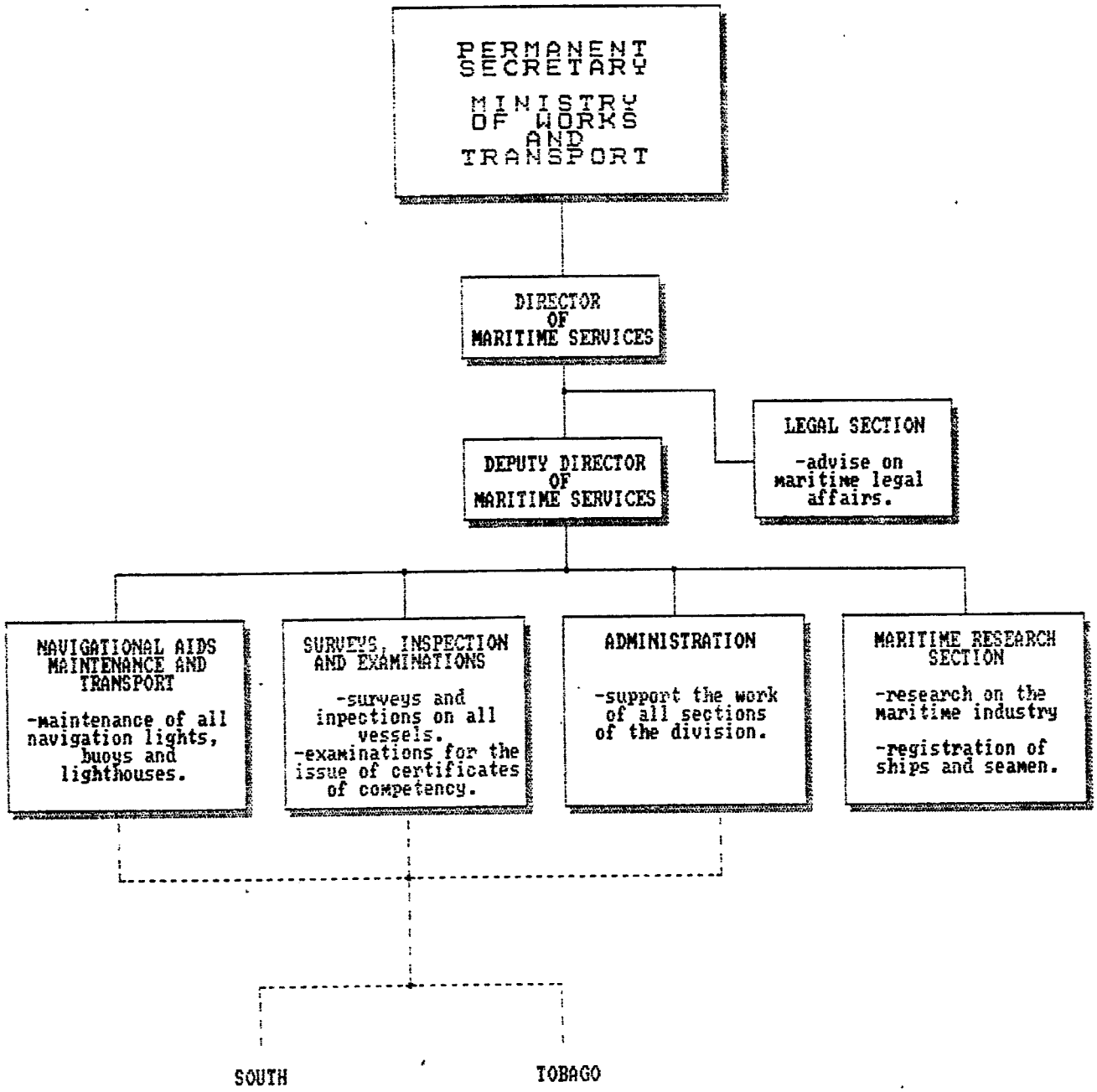
Additionally, there is an apparent lack of significance awareness at all levels of society, particularly among the major decision-makers of the importance of the maritime sector. Yet as indicated in Chapter 111, shipping has been identifed as **'the life-line for the economic development of Trinidad & Tobago'.** There appears to be, in the author's view, no perception of a need to establish an inter-connection between the existence of the Maritime Services Division in the context of the overall growth and development of the maritime sector.

The above-mentioned factors has contributed to some extent to the present operational constraints which are hampering the Division's ability to execute its defined regulatory role.

These are as follows:-

(i)Lack of staff- There are **only** two professional members of staff in the division. This shortage of staff can be divided into three categories.

ORGANIZATIONAL STRUCTURE
MARITIME SERVICES DIVISION



(a)Officers for formulating policy-There is **only** one qualified person to undertake this work from the above-mentioned **'pool'** of professional members of staff.

(b)Lawyers-Legal officers are required for the legal section to undertake critical work in developing primary and secondary legislation. In the case of the former, urgent legislation e.g. the upgrading of legislation for ports, harbours and pilotage. With respect to secondary legislation, safety regulations need to be completely urgently, and licensing regulations need to be drafted.

(c)Surveyors-These are necessary to ensure the safety of ships and shipping and the effective administration of the Shipping Act No. #24 1987.

(ii)Accommodation-The Maritime Services Division is presently housed in offices, which are both over-crowded and inadequate for present operations. Additionally, for reasons of efficiency and economy, it will be easier if these departments, are combined into one cohesive whole.

(iii)Training-The up-grading of Caribbean Fisheries Training and Development Institue(CFDTI) to offer more training courses. The latter which is under the portfolio of the Ministry of Agriculture, Land & Marine Resources, presently offers training courses to operators of fishing vessels, and seamen employed on the off-shore tugs. It is proposed that these facilities be expanded into a National Maritime Training Institue and offer courses for the training of ratings and cadets. This will involve a collaborative effort with the Maritime Services Division and the Ministry of Agriculture, Lands & Marine Resources.

As mentioned, the maritime administration has certain responsibilities with respect to pollution prevention. The Shipping Act No. #24 of 1987, however contains no provisions with respect to pollution of the marine environment- ship-generated or land-based. The Maritime Services Division has to ensure that its own ships and those foreign ships visiting the country's ports do not pose a threat to the marine environment. This will involve the inspection of ships including the examination of certificates and the Oil or Cargo Record Book (a record of the amount of oil or oily wastes that is discharge), and if necessary, the inspection of the ship itself. This is to ensure that ships are in conformity with the provisions as required by the International Convention for the Prevention of pollution from ships. There are two options which can be explored namely:-

(a) An amendment of the Shipping Act No. #24 1987, to make provisions for pollution of the marine environment by ship-generated pollution; or

(b) The enactment of an environmental act, which could cover all aspects of pollution including ship-generated. However the Maritime Services Division could be the implementational agency for enforcement of provisions relating to ship-generated.

Additionally, there is a need to have a core group of personnel within the Division to assist in matters related to ship-generated pollution, assisting in the development of contingency plans and also safety with respect to the operation of the mobile offshore oil units. This will require consultations with the Coast Guard which is responsible for clean-up operations after an oil spill, and also with the Ministry of Energy which grants licences for the operation of the offshore oil platforms.

In this regard, the Division should also consider acceding to Resolution A. 649(16), Code for the Construction and Equipment of Mobile Offshore Drilling Units, 1989, which entered into force on 1st May 1991.[3]

5.4 ASSESSMENT OF ITS ROLE AND FUNCTIONS.

Despite the constraints outlined above, the Division has been engaged in a number of activities all designed to assist in the maritime development of the country. These activities are as follows:-

(i)Registration of ships:-For the period 31st December 1990 to 31st December 1991, there were 25 applications for registration. Seventeen vessels have been registered and eight applications are being processed.[4]

(ii)Local maritime safety:-Registration and licensing of unregistered ships in an attempt to implement improved safety standards.

(iii)Maintenance of navigational aids:-The navigational aids are maintained on a scheduled basis, as opposed to the undertaking of such work when the need arises i.e. preventive as opposed to corrective maintenance.

(iv)Local Passenger Cruise Vessels:-As mentioned, in Chapter IV, the issuance of guidelines to the Port Authority of Trinidad & Tobago(PATT), with the intention of improving the safety of local passenger cruise ships.

(v)Training:-The division has co-ordinated five training programmes as part of a regional UNCTAD-TRAINMAR project to train supervisors and managers in port matters.[5]

(vi)Shipping Industry:-Meetings were held with suppliers of maritime safety equipment and lecture/seminars with the shipping community, including discussions on issues such as tax and other concessions in support of this facet of the industry. This is directly related to safety since it could act as an incentive for vessels to purchase safety equipment.

(vii)Maritime Safety Standards:-As mentioned in Chapter IV, a Memorandum of Understanding was concluded in 1991 with the Maritime Safety Authorities in St Vincent & the Grenadines and in Grenada with respect to Port State Control and the inspection of vessels which call at the nation's ports.

(viii)Classification Societies:-Formal agreements to survey and issue statutory certificates on behalf of Trinidad & Tobago with provisions for the training of nationals were concluded with two internationally recognised classification societies namely American Bureau of Shipping and Bureau Veritas. This standard agreement has been submitted to few more Classification societies in order that similiar arrangements can be made.

As stated, the functions engaged in by the Maritime Services Division pertain closely to its role as a Maritime Safety Administration. In the light of the importance of the port and shipping industries to the country's economic growth, the scope and functions of the division should extended and re-defined, in order that it may assume a more active role in the development of these industries.

The Division should be actively involved in guiding the drafting of policies for these areas. The Division should also become involved to a certain extent in the implementation of the policies, as an 'arm' of government responsible for the implementation of maritime policy.

Some of the issues which could be addressed by the Division can include the operations of the Shipping Corporation of Trinidad & Tobago(SCOTT), the owning and leasing of ships, and the establishment and operation of ports.

The establishment of the Maritime Services Division can be interpreted as an indicator of the need to co-ordinate the maritime activities in the country which are presently distributed among a number of agencies. However, there is still a need for a greater understanding of:

(i)The advantages of maritime development;
(ii)The various roles and functions to be undertaken in connection with maritime affairs;
(iii)The kinds of professional officials who are required for this purpose.

If the division is to become a properly functioning unit, there is a need for greater commitment towards the development of its infrastructure. While it may be argued that such a project requires a given level of capital expenditure e.g. computers, there are however sources of revenue such as vessel registration, licensing fees, survey fees, navigational aids dues and fees for various services which can offset the required yearly operational expenditure. In any case, the government needs to accept such commitment in the interest of national maritime development.

The approach to this project can also be divided into the immediate needs and concerns i.e. a short-term approach and a medium to long-term plan. Therefore, the infrastructural development can be accomplished on a phased basis. Some of the immediate concerns which can be addressed are:-

(i)Proper accommodation:-This can be sourced through the appropriate Ministry responsible for the provision of government accommodation.

(ii)Personnel:-The provision of two or three key personnel e.g. one Maritime Research Officer- to commence work in policy areas pertaining to maritime development. One or two Maritime legal officers to assist in the drafting of national legislation to assist in the ratification of a number of important international conventions. Additionally, the regulations to be drafted to give effect to the Shipping Act No. #24 1987. Such personnel can be sourced from the pool of World Maritime University's graduates, who are trained specialists in the various fields and who are presently attached to a number of other Ministries or Departments/Divisions in the Government Service.

The operational requirements namely the additional staff and computerization can be undertaken in the medium to long-term.

'The Wheels have already been set in motion'. Let the momentum continue by ensuring that the division obtains the requisite support that it needs to undertake its designated role for national maritime development.

NOTES AND REFERENCES.

1. The Shipping Act No. 24, Part XXIV Section 402, pg. 303.

2. International Maritime Organization, Cowley, J., "National administration for Safety and pollution prevention control", Seminar on Survey and Certification Tokyo, Japan, 6-10 October 1980.

3. Osterballe, J., " The MARAD role in Offshore Drilling Safety", World Maritime University, August 1992.

4. Director of Maritime Services Division- " Brief on Maritime Services Division".

5. UNCTAD has assisted numerous organizations through various training activities through its technical assistance projects such as TRAINMAR. The latter's activities includes the development of modules of maritime courses and seminars in ports. There are a number of regional centres in Asia, Africa, and Latin America. There is one centre in Guadeloupe (french-speaking Caribbean, and the Maritime Services Division is involved in the development of these training programmes.

CHAPTER SIX.

REVIEW OF POLICIES AND RECOMMENDATIONS ON PORTS, SHIPPING, MARINE ENVIRONMENT AND MARITIME SAFETY.

6.1 INTRODUCTION.

After a review of the problems in the Ports, Shipping and Marine Environment/Safety sectors and the recommended policy approaches as outlined in the '**Draft Medium-Term Macro-Planning Framework**', this chapter will outline the various options that could be applied or may be applicable to the above-mentioned areas.

6.2.1 SHIPPING POLICY.

The shipping policy of a country should evolve within the framework of a national transportation plan. The latter should also include plans for port development. The national transportation plan should be a sub-set of the overall economic policies of a government/state, since an important element towards the achievement of the goals and objectives of these policies, is the vital role played by the transportation network or infrastructure.

Shipping policy may be defined as the ***"totality of economic, legal and administrative measures by means of which the state influences the position of its national fleet in the national economy and in the international freight market".***[1]

A shipping policy has two different aspects: domestic, which is the attitude of the state towards its own merchant marine and foreign, which is its attitude towards the fleet of other countries.

There are two models of a shipping policy that could be adopted by a country namely:-
-liberalism
-Protectionism.

A liberalist policy implies that the merchant marine operate on the freight market without any intervention of the public bodies/governments or its agencies.

In this regard, there are three different types of shipping liberalism. First, there are those countries which allow foreign-owned ships to carry their flag, hence scarely intervening in their administration. This is the case of the open-registry or flags of convenience.

Second, there are countries in which shipping is nearly totally in private hands and government assistance has mostly an indirect character e.g. tax allowances and credit facilities.

Third, there are those countries who offer direct assistance, normally of a financial nature to shipping or those in which the state is directly involved in shipping activities, but which advocate free competition in international shipping and do not use on a large scale, any administrative measures such as cargo reservation.

On the other hand, protectionism comprises a wide variety of acts and pressures exerted by governments and is designed to increase the competitiveness of the national fleet. Protectionism normally takes the following forms:-[2]
(a)Subsidies to the national fleet;
(b)Special beneficial fiscal treatment to the national fleet;
(c)Special taxes, berth priorities and different berth charges for national vessels;

(d)Special preferential treatment with credit facilities for imports and exports and special tariffs when using national vessels;
(e)Allocation of cargo for the national fleet.

The model that is eventually adopted by a country is dependent on the level of development of its merchant marine, the pace of economic development, and its foreign trade. The shipping policy of a country should also reflect its economic, social, political, and cultural systems.

To what extent countries have actually adopted a purely liberal policy to their shipping industries is debatable, and what one has observed within the last few years is that states who have professed to be totally liberal in their approach to shipping have in fact found it necessary to provide some measure of assistance, particularly in the initial stages until their fleets achieved a given level of viability.

It is not uncommon for states to provide a certain level of assistance to foster the development of critical indigenous industries particularly those which may have the characteristics of being important to national and economic development, and also national security. In my opinion, shipping is no different in this respect, and the important issue to be resolved is the amount and type of assistance to be provided and at what stage the industry should be weaned off from this assistance and be able to cater for itself.

There are number of reasons that have been advanced by countries for the establishment of a national fleet. The goals and aims of a national shipping policy may be the following:-[3]

(i)To promote and protect a merchant marine for defence purposes;

(ii)To establish a merchant marine capable of transporting the country's essential trade in order to avoid the disruptions consequent upon wars in which the country is not participating;

(iii)To satisfy national prestige;

(iv)To enable an infant merchant marine, which will eventually be able to dispense with assistance to be established;

(v)To foster trade and communciations between the country concerned and other countries, particularly trade with colonial territories;

(vi)To save foreign exchange otherwise used in freight payments;

(vii)To provide or maintain employment for national seafarers;

(viii)To protect the merchant marine in times of severe competition;

(xi)To counter actual or expected discriminatory practices by conferences or national trade groups;

(x)To improve the quality of the merchant fleet and increase its competitive strength;

(xi)To compensate national shipowners for an overvalued exchange rate maintained for other purposes or for disadvantages imposed on shipping by the protection of industries;

In the 1960's and 1970's, international maritime transport was dominated by developed nations. With the achievement of independence a number of developing countries advocated for the establishment of their own national shipping lines, with the intention of participating in the carriage of their goods and reducing the monopoly of the foreign carriers, most of whom had established conference systems.

Additionally, it was intended to establish some control over the freight rates charged by these carriers, since transportation costs are normally a main component of the overall cost of the commodity. It was hoped that this would stem the outflow of foreign exchange on the invisible trade of the balance of payments account.

To what extent these countries have derived the maximum economic benefits from investment in national shipping companies is yet to be determined. Most costs associated with ocean shipping, such as ship investment, insurance, fuel, port dues, maintenance and repair, supply as well as some crewing, training and management costs are usually in foreign exchange. The only foreign exchange savings appears to be domestic currency crewing costs and profits if the national operator is able to achieve efficiencies in its operations which are on the same level as its foreign competitors.

6.2.2 GLOBAL SHIPPING TRENDS.

Countries contemplating investing in the establishment of national shipping companies or expanding their operations must become cognisant of the present and future trends in international shipping and the implications that these may have for their projects.

First, the international shipping arena has been characterised by a number of changes, the most important of which has been in the area of technological development. This has resulted in larger and faster ships and new cargo-handling techniques. The efficiency and operational capacity of ships have increased dramatically in recent years, thus allowing more cargo to be carried by fewer ships. One has also seen the emergence of the flexible combination carriers, such as the oil-bulk-ore ships, which have made the carriage of dry and liquid bulk cargoes interchangeable.

These technologically advanced ships also require the simultaneous development of effective land-based support facilities. In order, to derive the maximium benefits from advances in cargo-handling and transport technology, the whole transport network i.e ports, and internal distribution(rails and road) had to introduce technological changes in their operations. The aim is for the whole system to function as an 'integrated package' for the overall benefit of shippers and consignees.

Second, the challenge that currently faces countries (both developed and developing) is that the international shipping environment has become increasingly competitive, and to keep abreast with changes in technology requires large capital resources as well as a high level of expertise. Many shipping companies have, as a result, resorted to cooperative operations in the form of consortia, joint services, joint ventures, space charters, mergers, and leasing arrangements.

Another development which has worked to the detriment of most countries is the fact that the world shipping market is depressed and as a result there is a surplus of excess tonnage.

Particularly for developing countries one may assume that this excess tonnage will provide an opportunity to upgrade, including expansion of their fleets. While a few of these countries have been able to capitalize on this to expand their fleet, the majority have not been able to take advantage of the low, new, and secondhand prices that are currently available.

The supply of finance for new and secondhand ship acquisition by developing countries has become quite restrictive in recent years. Generally, banks have become more cautious in ship lending because of the surplus of tonnage which has affected the value of financed ships.

Most traditional lenders are exercising great caution, suspicion, or outright reluctance or refusal to lend to all but the most reliable owners. Liquidity and quality of ownership are the principal criteria considered by lenders now, which tends to favor the large, established, and inter-modal companies. The small, unknown developing shipping company therefore has no ready access to ship financing and as a result is unable to take advantage of the low, new and secondhand ship prices to expand, rebuild, or upgrade their fleet.[4]

Inter-modalism is another feature in the international transport of goods. Major traditional short distance, general cargo liner routes have largely disappeared as the cargoes are increasingly moved by intermodal transport.

One has also seen the emergence of land-bridges. For example, the growth of the American Mini-landbridge is another contributing factor to the increased use of Miami Transhipments as opposed to direct mainliner calls at the Caribbean islands. Pacific cargo is almost entirely unloaded at west coast ports, moved cross-country to Florida and subsequently transhipped via feeders to the Caribbean. This reduction in vessels transiting the Panama Canal has resulted in a loss of direct calls at various Caribbean ports e.g Kingston- Jamaica.[5] This development has implications for further port expansion and development.

6.2.3 SHIPPING POLICY FOR TRINIDAD & TOBAGO.

International trade is highly dependent on shipping with over 90% of world trade and 94% of developing countries trade by volume transported by ocean shipping.[6] Trinidad & Tobago is no different in this respect, since most of its products are carried by sea-borne transport.

Trinidad & Tobago is a maritime nation, with a small economy that is very dependent on imports and exports for its economic growth and development. As mentioned, the main trading partners are the United States of America, the European Economic Community (E.E.C.) and the Commonwealth Caribbean.[7] The infrastructural base of the country is being further expanded into petroleum, methanol and urea industries. Additionally, there are also proposals for further diversification of the economy through the development of the tourism(the cruise ship component) and agricultural sectors. This will have the overall effect of increasing the country's dependence on shipping.

Trinidad & Tobago's participation in shipping is multi-dimensional since it involves:-

(a)Coastal and inter-island trade.

(b)Intra-regional Caribbean trade.

(c)Extra-regional and International Trade.

The Shipping policy of Trinidad and Tobago may have as its goals:-

(a)To reduce the nation's dependence on foreign shipping lines thereby reducing its vulnerability in the event that these lines cease operations;

(b)To affect some measure of participation and control on the freight and tariff structure which has been dominated exclusively from metropolitan countries;

(c)To assist in the expansion and development of the industrial base, since in establishing some control over the freight rates, this will improve the marketability of the country's exports.

(d)To provide employment and training opportunities to the nation's seafarers and to assist management and operating personnel in acquiring the necessary skills to man the various sectors of the industry.

In promoting the growth of the shipping industry, the government should consider whether to invest in its own shipping services or be dependent on foreign ships. As indicated, the state has already committed itself to a given level of involvement in shipping through the establishment of the National Shipping Corporation(SCOTT), and thereby signalling its apparent intention to reduce its dependence on foreign lines.

However, the further involvement of the state in the shipping industry will necessitate the evaluation of a number of factors namely:-

(i)Operational considerations-the country's ability to provide the necessary resources, such as finance and qualified personnel to manage and operate the fleet effectively, particularly in light of the international financing situation outlined;

(ii)Commercial-the type of shipping services would depend on the status of the country's economy and would reflect the range of commodities to be shipped;

(iii)Administrative-this will include ships, seafarers, cargoes and shipping companies.

All these factors should be considered in the development of the national shipping policy. Additionally the latter should incorporate and reflect the country's multi-dimensional approach to shipping.

In the further development of the shipping industry it is suggested that it should incorporate a multi-faceted approach i.e. state, private and foreign ownership.

The present trend in the international economy is a reduction of state ownership of a number of industries through their restructuring and increasing the participation of the private sector both foreign and domestic. In Trinidad & Tobago, a similar approach has been adopted and a number of state-owned companies have been divested, and the emphasis is on the encouragement of private domestic ownership and also foreign investment.

There are a number of reasons for this multi-faceted approach:-[8]

(i)Given the level of investment required to purchase ships, state participation would be necessary in one form or the other. Investment in shipping requires a very large capital outlay which would cause a certain reluctance for investment by private operators;

(ii)The lack of trained local personnel in the maritime industry may mean that a number of personnel, who have the influence and experience, may have to come from abroad;

(iii)The financing of shipping ventures is an area of expertise in which general bankers are not quite knowledgeable. Reliance must therefore be placed on external sources for expertise in this area.

(iv)The emergence of ship consortia and the level of ship technology requires a given of expertise and capital. In some cases, assistance from a foreign investor may be necessary.

Trinidad & Tobago is a signatory to the UNCTAD Code of Conduct. This code calls essentially for a system of international regulation of conference trade. It accepts the conference system as a proper mechanism to render efficient service, but establishes the principles that (1)Governments will have a role in relations between shippers and carriers;

(2)Conference membership shall be granted on the basis of some non-commercial criteria, one of which is the development of national shipping lines; and (3)Cargo allocations to aid national lines are acceptable and are recommended to be based on a 40-40-20 formula with 40% of the trade (volume, value, or revenue) reserved to each of the trading partners and 20% to third party carriers.

If the code is acceded to it will give SCOTT the opportunity and/or the right to transport at least 40% of the country's general cargo imports and exports. However, a number of arguments have been put forward against the Code of conduct, one of which includes the ability (i.e the capacity) of the national fleet to carry 40% of the cargoes. It reduces the number of ships that can compete for carrying the reserved cargoes. Thus, a sheltered market is created where competition is significantly limited. Additionally, there is a tendency for companies to become complacent if there is little or no competition, as there is no incentive for innovation or rationalization. Furthermore, high-cost operators would not be forced to become efficient. The result can only be increased costs, and less efficiency. High cost carriers would tend to dominate in such captive markets.[9]

Most important, however, is that one of the country's major trading partners i.e. the United States of America is not a party to the Code.

The National Shipping Corporation is involved in the transport of bulk cargoes from the methanol, ammonia and urea companies. However, no formal directive was ever implemented to ensure that the companies from the private sector or the state companies should utilize the Shipping Corporation as its official carrier.

Some informal mechanism will have to be introduced to ensure that SCOTT is able to participate in the carriage of government cargoes. In the liner trade, the Shipping Corporation could explore the feasibility of agreements with conferences to engage in the transport of the country's liner cargoes.

In addition to the Shipping Corporation, the state's involvement in shipping industry could include:-

(i)Shipping Investment Fund-the provision of financial assistance to local private enterprise. The establishment of an investment fund to aid and encourage local private enterprise to participate in the development of the Shipping sector is another step which government should consider. Access to investment funds guaranteed by government could be an attractive incentive in inviting new entrepeneurs to the field of shipping. For example, investment could be encouraged to facilitate the development of the small vessel fleet(the schooner fleet) which ply between Trinidad and the other islands of the Caribbean, and which utilize the CARICOM(Caribbean Common Market) jetty. Other potential shipowners and operators can be encouraged to seek capital funds from the scheme previously mentioned and enter into joint-venture operations with foreign firms.

The state's involvement in shipping should be extended to include support and/or ancillary facilities for the shipping sector. This will include:-

(a)National Maritime Training Institue:-There is a lack of skilled personnel to occupy positions at almost every level in all areas of the shipping industry.

As mentioned, in Chapter V, the state should establish a modern training institue whose programmes could eventually be expanded to service the entire shipping sector with an acceptable number of trained personnel in a number of areas relevant to the shipping industry e.g. marine insurance and ship management.

(b)National Shippers Council:-To ensure that freight rates charged by the national shipping line and other foreign lines visiting Trinidad & Tobago on a regular basis are consistent and equitable.[10]

(c)The development of a maritime insurance industry.

6.3 PORTS

6.3.1 INTRODUCTION.

" A port is a major national interface between a country and the outside world and as such it is a vital element in the national economy. It is an expensive capital investment with a large proportion of sunk costs- that is once the investment is made it involves a long-term commitment. If a mistake has been made it is difficult to realise one's assets."[11]

As mentioned, in Chapter 111, ports are either 'comprehensive' or 'landlord' in structure. In the case of the former, the government is the owner of all the facilities and responsibile for undertaking all activities.

In most countries because of the level of investment required for port infrastucture, the latter is normally undertaken by governments who are also primarily responsible for the provision of all activities. This has subsequently led to the formation of public-sector port authorities.

6.3.2 PUBLIC SECTOR PORT AUTHORITIES.

There are a number of advantages and disadvantages to be derived from the establishment of these public-sector authorities. These are as follows:-[12]

(a)Property rights- Seaports are unusual in that they generally involve structures extending from the land(or territory) into the water(or aquatory). In the case of the latter, it is normally the state which is accorded legal title to the area, so any 'person' who establishes a port structure will only possess 'tenuous' rights to the property and may be as a result reluctant to undertake massive investment in such an undertaking. To confer property rights to undertake port expansion normally requires the passage of legislation in the form of statutes. If it is a multi-user facility and more changes are needed to these statues, it may be easier to have a permanent public body established to undertake this task. Because of the powers conferred by the property rights one may have to establish a recognizable port authority whether it is autonomous or not.

(b) Planning- Because the public sector body possesses secure property rights, the planning to be undertaken for the construction of port facilities are normally more effective and comprehensive, since it will be undertaken at a macro-level and more variables may be accounted for.

(c)The significance of 'public goods'- 'Public goods' and services are defined as those which are unlikely to be provided sufficiently, satisfactorily or at all by competitive industries; in other words there is a 'market failure'. As a consequence, action is required by some public authority. In the case of port services this will apply to all beacons, buoys and other fixed or floating navigational aids.

(d)Dealing with externalities- An economic externality is a significant economic effect which is outside, or external to the finances of the person taking the relevant decision. In port authorities, such externalities are generally congestion of port approaches and safety, whether of people or property. Port authorities commonly need, and have, powers to deal with all of these. Pollution of air, land and water may need to be controlled, and ships provided with some economic and practical alternative to dumping rubbish, oil and sewage overside. Safety and pollution are likely to remain as public sector interests, even in a single-user port. Sometimes externalities interact with the planning function.

(e)Promoting efficiency- A 'comprehensive' port authority will need to monitor its own efficiency, since profitability does not always equal efficiency and may indicate some degree of monopolistic exploitation. It is therefore necessary to supplement purely financial measures with physical and economic indicators of a port's efficiency such as labour, crane and berth productivities. Measures of congestion such as ship waiting and container dwell times may also be useful. The reporting systems of a 'comprehensive' port authority will need to be substantial if it is to remain efficient. With a 'landlord port', the principal means of achieving efficiency will be through competition. The port authority must be able to ensure that there is competition. This does not mean that there must necessarily be a large number of firms competing simultaneously. It simply means that the markets in question should be contestable in the sense that entry is easy for a new firm, whose exit will also be easy if its efforts turn out to be unsuccessful.

Port authorities which act wholly or partly as a 'landlord' may need to take a closer interest in the business activities of its tenants than may commonly appear. Its functions are not only limited to the provision of channels, docks, quays and wharves at public expense and the arrangement of appropriate contractual rents.

On the other hand, public sector port authorities represents a bureaucracy, with all its disadvantages:

(i)Definition of their terms of reference- If it is too narrowly defined it will be unable to accommodate future events or unpredictable factors. However, if the powers are too widely drawn it allows the port authority to expand its operations into activities which divert managerial attention from the main objectives.

(ii)Monopolistic position:- Their ability to make profits sometimes stems from a combination of this monopolistic position with any political pressures placed on them. It is certainly no adequate indication of their efficiency.

(iii)Staffing:- Such bodies often come to be dominated by members of one profession who then use this to enhance their own professionsl prestige.

(iv)Power and influence:- Such bodies are often controlled by committees of boards in which responsibility is diffused. Sometimes they consist partly of people representing or nominated by highly interested parties, such as associations of shipowners' agents or trade unions. Such people may succeed in advancing narrow sectional interests rather than those of the ports' ultimate users.

6.3.3 GLOBAL PORT TRENDS.

The trend world-wide in a number of developed countries e.g Europe, Russia, China, and Spain is to decentralise direct government control and to place the port on a more commercial footing, by increasing private involvement. The forms this normally took varies considerably from country to country. The reasons for this trend is based on the assumption that putting the port on a commercial basis will improve productivity and reduce the size of public sector commitments, although it is recognised that state involvement is necessary and inevitable.

Most ports of the developing countries including those in the Caribbean are managed by public sector authorities and appears also to have suffered more of the disadvantages that are normally an inherent feature of most public-sector authorities. The latter tends to place more emphasis on socio-political objectives such as employment creation, and national defence as opposed to productivity and cost-effectiveness. Therefore these ports became high-cost operations and in some cases even enjoyed a monopoly rent.

One of the most important changes that has taken place in the world economy is the recent trend towards the globilization of trade. Notwithstanding the fact that the goods of developing countries have always been traded internationally, because of their high levels of indebtedness, these countries have become increasingly dependent on their exports to earn foreign exchange and as a consequence their macroeconomic policies have become more export-oriented. The markets for these goods have become more competitive, since the same commodities can also be obtained from other regions of the world. The ports of these countries have always been the main conduit for the imports and exports of goods.

However the inter-relationship between the efficiency of these ports' operations and cost of the products of cargo-owners i.e shippers amd importers have always been kept distinct. Port charges and costs were thought to have little impact on trade.

To offset these inefficiencies and ensure a certain level of competitiveness for these products, the governments employed such fiscal mechanisms as subsidies and tariffs.

Unfortunately, these inefficiencies in port operations are transmitted to the prices of a country's exports and reduce their competitiveness in international markets. Additionally, because of the liberalization of trade internationally, governments are also forced to remove such artifical barriers to trade.

Ports which are owned by governments normally face enormous obstacles in reaching international levels of innovation, productivity, and cost-effectiveness. One constraint in this regard is that the process of change in government systems is usually very long and tedious, as ideas must work their way slowly through many levels.

In contrast, the private sector is able to operate with greater flexibility- constantly seeking new ideas which might give them a competitive advantage, changing policies, plans and operations and moving more quickly than their public-sector counterparts. They are able to introduce commercial discipline to these operations.

Recent trends in the world economy and international trade have forced governments to re-examine the operations of these ports. It has been realized that port costs is an important element in the overall cost of the commodity and that these must be minimized in order for their products to become more competitive internationally.

It is therefore necessary to transform these ports so that they can operate commercially; the creation of a commercial port environment has become encumberant on these governments. To achieve this, governments must allow the free play of market forces and to sever the demands of pressure groups from port activities e.g. powerful trade unions.

It has now become necessary for both governments and private interests to harness their varying but inter-related capabilities and transform these ports into cost-effective and competitive organizations so that exporters can derive the maximum benefits when trading internationally, and also importers so that consumers can also benefit from the reduced prices of the products.

The afore-mentioned recognises that governments do have a critical role to play in ports, but this should be seen more in terms of facilitating activities i.e as owners, investors, partners, facilitators and regulators. They should create the basis for private interests to become involved in public ports by identifying a feasible mixed public-private option for their ports. This must be supported by the appropriate institutional framework.

The latter will include:-

(a)Deregulation
(b)Antimonopoly laws.
(c)Decentralization
(d)Statutory authority for private participation, supporting laws regulations and policies.[13]

6.3.4 OPTIONS FOR RESTRUCTURING PORTS.

The options which can be utilized to enhance the commercial viability of the port facilities include:-[14]

(i)Private Stevedoring Companies;
(ii)Management Contracts;

(iii)Concessions;
(iv)Joint Ventures between the public and private sectors;
(iv)Authorizing single-user terminals to handle third-party cargoes;
(v)The conversion of public-sector ports into limited liability Companies;
(vi)The sale of ports.

PRIVATE STEVEDORING COMPANIES.

While the port and its facilities are still under direct public ownership, these companies will assume responsibility for cargo-handling and storage by direct employment of the labour to undertake these services.

Governments, however, still have certain responsibilities with respect to promulgation of regulations in areas such as the rights of workers to form and participate in unions etc.

MANAGEMENT CONTRACTS

These are agreements between governments and private companies to provide management control of certain functions of a port for a specified period and at an agreed compensation.

These contracts are flexible and can be utilized for any service, group of services or for an entire port. While governments retain ownership, these contractors are given extensive management authority and operational control of port activities and are paid by governments regardless of the profitability of the port.

CONCESSIONS

Port concessions are granted to private interests when the port wishes to reduce the demands on fiscal revenues or seek to improve the commercial operations of their ports.

Concessionaries assume all commercial risks for operating the port or terminal and must make payments to the government regardless of their profitability. Under this arrangement, governments retain ownership of capital assets, utilize the skills of the private sector to participate in the income generated through lease payments and to benefit from the receipt of tax revenues.

JOINT VENTURES BETWEEN PUBLIC AND PRIVATE SECTORS.

Joint ventures encompass the participation of governments and private interests in the provision of port services and port facilities. Joint ventures allow governments to utilize the commercial, technical and managerial expertise of private interests, while maintaining a high degree of control over their activities. A joint-venture permits the public sector to retain its status as a port operator even though certain activities are executed jointly with private interests.

AUTHORIZING SINGLE-USER TERMINALS TO HANDLE THIRD-PARTY CARGOES.

The long-term success of any program to restructure public ports is largely determined by the extent to which it promotes inter and intra-port competition. This can be achieved by authorizing single-user terminals to handle third-party cargoes. If single-user terminals are allowed to handle third-party cargoes it will provide competition to the main public-sector port, which is normally operating at a non-commercial level.

This will provide facilities at a lower cost to small producers thereby improving the competitiveness of their exports. Because of competition, the public port is forced to re-examine its operations.

CONVERSION OF PUBLIC-SECTOR PORTS INTO LIMITED LIABILITY COMPANIES.

This permits governments and private interests to divest themselves of ownership by selling shares, and at their option, to become partial or total owners through open-market purchase of shares. Such divestiture by governments is very similiar to an outright sale, with the exception that public ownership might be more easily reaquired through open market stock purchases.

Limited liability companies are subject to all existing national laws which govern publicly traded enterprises. Although these ports are privatized, governments retain control and authority over national ports through antimonopoly laws, regulatory regimes and contractual arrangements with private interests.

SALE OF PORTS

Sale of the entire operations as a going concern to private investors. This is the most complete form of private participation, but it does not eliminate government interest in ports.

The rights of private interests over such properties are not absolute; an institutional framework should be structured to provide governments with assurances that port services and facilities would be furnished without their direct ownership and operations so that national economic growth objectives would be attained. The contracts of sale are so designed to ensure that there is an on-going inter-dependent relationship in areas such as participation in profits, employment rights of workers, government utilization of facilities in times of national emergencies and environmental protection would be established.

Governments retain their sovereign control and decisional authority through the above-mentioned instruments and agreements with purchasers.

In should be noted that the above-mentioned options for restructuring port services and port facilities are not mutually exclusive, in that the selection of one does not preclude the simultaneous utilization of others.

For example, government port administrations can grant concessions, while at the same time entering into joint ventures and authorizing the handling of third-party cargoes at single-user terminals.

The objective of the national port policy should be the efficient development of the major ports given its role as a conduit of the nation's imports and exports, and the significance their overall efficiency (financial and operational) has on the cost of the goods.

6.3.5 PORTS POLICY FOR TRINIDAD & TOBAGO.

The national ports policy should be a mixed private/public initiative in the restructuring of ports to achieve a given level of commercial viability.

Other factors which must be considered in the evolution of a port policy. These are namely:-

(i)The geographic position of the country.
(ii)The volume and nature of their seaborne trade.
(iii)The maritime boundaries.
(iv)Their major trading parties.
(v)The structure of foreign trade.
(vi)The level of industrial and agricultural development.
(vii)National resources for investment in favourable port locations which provide safe, technically sound and economically viable sites.

The national ports policy would also have to consider the development of port capacity in close relation to the parallel expansion of inland transport links to or from the ports. The latter is also important in facilitating and encouraging trade growth.

The environmental impact of port planning will have to considered in the port policy.

Port activities must be compatible with other uses of an estuary, and with public health and quality of life. These activities have the character of public functions and should be treated differently from the commercial activities of the port.

In the development of this policy, it will also be necessary for the government to classify ports according to local and national importance. Ports which are considered to be major ports of national importance might be brought under the national sphere for co-ordinated planning and development, and private ones could be left under their respective management. In this respect it will be necessary to establish an agency which will be responsible for the overall co-ordinating of the activites of these ports.

This policy would also allow national governments, in view of limited national resources, to concentrate funding of port development projects on a national scale without the danger of such facilities being duplicated by each major port. This would have to be followed by the necessary national legislation.

Alternatively, all major ports in a country could be brought under one single act for systematic administration and to render equality of treatment. Co-ordinated development and national policy formulation becomes easier under a unified administrative structure.

Governments should also play a role in the development of regulations which should create a basis for free and uninterrupted competition between ports, as well as among those providing services at a port, whether governments provide services and facilities on a exclusive basis, jointly through contracts with private interests or entirely through the private sector.

6.4. MARINE ENVIRONMENT.

6.4.1 GLOBAL ENVIRONMENTAL TRENDS.

"The sea is the end-station and a mirror of life and activities from human beings on land."[15]

For many centuries, man has depended upon the oceans for food, oxygen, minerals, energy, transportation, military purposes,recreation, and waste management.

Particularly with respect to waste disposal, the oceans have always been a receptacle for the dumping of waste since pre-industrial era based on the philosophy of 'dilute and disperse' meaning that it was assumed that the wastes would be permanently disposed, since it was felt that the oceans had an infinite assimiliative capacity. In addition, human activity was limited, and man simply extracted from his surroundings what was necessary for his survival and existence.

All this, however, underwent a transformation in the middle of the nineteenth century when advances in technology were applied which revolutionized industrial processes and agricultural production. This subsequently led to the generation of more waste into the terrestrial and aquatory environments.

However, the impacts on the environment were still not totally understood until approximately the 1950's and 1960's when marine ecology became a science.

A publication in the 1960's by Rachel Carson described the fate of the human environment due to the misuse and overuse of chemicals.[16] Since then concepts such as 'ecology', 'environment' and the 'marine ecosystem' served to increase man's awareness of the limitations of the oceans and the need to perserve and conserve marine resources.

Initially, actions to the marine environment centred on ship-generated pollution. In 1926, the International Maritime Conference in Washington produced the first international convention relating to oil pollution which was not ratified by any state.

After that several international conferences including the International Maritime Organization, also considered the question of marine pollution.

However it was not until the disaster of the ships- the 'Torrey Canyon' and 'Amoco Cadiz' that the international community became fully aware of the impact that ship accidents could have on the marine environment.

This led to the development of a number of conventions, protocols, codes, and recommendations dealing with pollution from vessels. These covered mainly two types of pollution:-

(i)Operational Pollution-pollution which results from routine operations.

(ii)Accidental Pollution-discharge of oil due to accidents or collusions.

Significant conventions in this respect are the International Convention on the Prevention of Pollution from Ships(MARPOL 73/78) and the International Convention on Collusion regulations(COLREG) 1979.

The focus, therefore, has been primarily on the development of regulations which dealt with vessel-based pollution. The latter, however, accounts for only 10% of the degradation of the marine environment. Eighty(80%) of the contaminants which enter into the marine environment are from land-based activities!.[17]

There are six forms of marine pollution namely:-

(i)Ship-generated pollution or vessel-source pollution (navigation).

(ii)Pollution by dumping (the disposal of wastes at sea).

(iii)Land-based pollution (the discharge of a wide range of shore-generated effluents).

(iv)Pollution from or through the atmosphere (the dissemination of emissions on land).

(v)Pollution from sea-bed activities(off-shore petroleum exploration and exploitation); and

(vi)Pollution from activities in the area(deep-ocean mining).

The prinicipal wastes include dredged materials, sewage sludge (typically contaminated with industrial, and sometimes radioactive wastes), hydrocarbon-related wastes substances, industrial wastes (notably toxic chemicals), heavy metals (cadmium, mercury-typically components of contaminated sewage sludge or industrial wastes), radionuclides, and worn-out vessels(military and civilian).

Toxic industrial chemicals and hydro-carbon related products appear to be the most significant entering the sea. The former are introduced through the atmosphere or rivers, while the latter (notably herbicides and pesticides) are typically carried into the sea by inadvertent run-offs from the land.[18]

Increased scientific evidence has led to the discovery that the assimilative capacity of the oceans is not finite, and that there is a need for a new re-thinking for a number of reasons:-

(a)The fate of toxic wastes entering the seas is not fully understood and therefore the risks cannot be assessed confidently.

(b)Some wastes persist for long periods up to hundreds of human generations. Present-day human organizations are not designed to deal with long-term impacts.

(c)The impact of some wastes forms can be so great as to threaten life on earth, and there is no precedent in the human experience for coping with impacts of such magnitude.

(d)There is a growing realization that all ecosystems are intimately interconnected. The seas bathe all shores, including those of the polluter.[19]

A number of regional agreements have emerged within the last twenty years on land-based marine pollution control. Some of these include:-

(i)The 1974 Helsinki Convention for the protection of the Marine Environment of the Baltic Sea Area.

(ii)The 1974 Paris Convention for the Prevention of Marine Pollution from Land-based sources.

(iii)The 1976 Barcelona Convention for the Protection of the Mediterranean Sea against Pollution.

(iv)The Montreal Guidelines for the Protection of the Marine Environment against Pollution from land-based sources 1985.

Yet, in spite of the significance of the problem, there is no international convention dealing with pollution from land-based sources.

In the 1982 United Nations Convention on the Law of the Sea, only two of the Convention's 24 Articles on the protection and preservation of the marine environment are directed at the creation and enforcement of controls on land-based marine pollution, although 14 Articles are directed at vessel-source pollution.

The new thrust of global pollution control policy is on the development of new waste management policies which recognised that wastes are not assimiliated but re-circulated, and that there is a need to reduce pollution at source.

As mentioned, in addition to the need to control pollution of the seas, there is also a need for preservation and conservation of marine resources and the protection of some representative areas of the marine environments. For example coral reefs along part of the coastline which are habitats for rare species of fishes.

The coastal seas in addition to satisfying human needs for transport and diet have also become increasingly a source of recreation and tourism. This has created new forms of uses of the marine environment, further crowding waterways and creating competition for marine resources.

This new development has resulted in the need to review prior legislation on the use of marine resources, which may have concentrated mainly on single-use management of the various marine resources to one which will co-ordinate multiple and often conflicting, demands upon these resources i.e. multiple-use management.

In this respect, there are three basic legislative and management approaches which can be identified:-[20]

(a)**The National Parks Approach:-** the extension of terrestrial national parks legislation to provide for the creation of national parks, reserves or sanctuaries in inter-tidal and sub-tidal areas. Activities are excluded that extract or harvest renewable resources and are seen as reserves for research and recreation that have minimal impact upon their environment.

(b)**Fisheries Approach:-**the scope of fisheries legislation is broaden to enable it to make specific provision for the protection of habitat of commercially significant species and for the conservation of marine resources generally. Under this approach, areas that are set aside are typically sites of immediate importance for spawning or larval development of commercially important species.

(c)**Co-ordination or multiple-use management:-**a co-ordinating agency to provide for conservation, sustainable development, and multiple-use of the marine environment.

6.4.2 AN EVIRONMENTAL POLICY FOR TRINIDAD AND TOBAGO.

"We have two choices-to continue as we are and perish, or change our course"![21] A dramatic statement to sum up the options available with respect to an environmental policy for Trinidad and Tobago.

As stated, an environmental policy has yet to be enunciated for Trinidad and Tobago, although like most countries of the developed and developing world, the country is experiencing a number of environmental problems-one of the most critical being pollution of the rivers and waterways from land-based sources.

The depletion and exploitation of the marine resources also has to be addressed, since in attempting to satisfy the needs of the present generations, the ability of future generations to meet their needs should not be compromised i.e development must be sustainable.

One of the present challenges that faces the nation as it implements more plans, proposals and strategies to achieve further economic development- is how to proceed with this pace of development and yet maintain ecological sustainability i.e. patterns of industralization that enhance the contribution of industry to economic and social benefits for present and future generations without impairing basic ecological processes.

Attempts must be made to foster new relationships between industry and the environment, since the latter should not be an obstacle to industrial success. Ways must also be found to reduce carbon dioxide emissions, obtaining viable chlorofluorocarbons(CFCs) substitues and the development of new agricultural and production methods. Tourism, manufacturing and agriculture are some of the sectors that have been earmarked for further development. This increase in human activity will place further demands on the marine resources and the environment. Strategies have to be developed to deal with these increasing and in some cases conflicting uses/ers of these resources.

In order to achieve its environmental policy, a number of goals and objectives may have to be developed. These may include:-

(a)Pollution control-air, and water pollution. As a short-term objective this may include the reduction or elimination of the number of wastes that is introduced into the marine environment;

(b)The establishment of an administrative and legislative framework which will be responsible for co-ordination and management of the environment;

(c)Environmental planning and management to preserve and conserve marine resources;

(d)Adherence to regional agreements and international conventions on the environment.

Environmental Management can be defined as the management of activities within environmentally tolerable limits.

Regulations for environmental administration fall into three major areas of control; pollution control, natural resource management and environmental planning.

The environmental policy should address the improvement and enhancement of the quality of life of present and future generations through a reduction/elimination of ecological degradation, cognizance of the interconnectedness between man and his natural environment(terrestrial and aquatory).

It is also suggested that this environmental policy be linked to the nation's population policy since in Trinidad and Tobago like most islands of the Caribbean the population levels are beyond the carrying capacity of the environment. There is a need for a reduction in population growth.

The report on **'Guidelines for environmental administration in Trinidad and Tobago'** prepared on behalf of the standing Committee on the Environment by Dr. Carol James outlined a number of recommendations for the establishment of a framework for environmental administration and management.

This included the following key elements:-

(a)A broad environmental policy;

(b)The creation of a National Environmental Authority to co- ordinate all environmental management in the nation; and;

(c)The enactment of a broad National Environmental Act giving specific legislative authority the responsibility to move forward to protect the environment.

This report also included a number of strategies for implementation. Some examples of these are:-

(a)The designation of one agency, suitably equipped to co-ordinate all environmental matters;

(b)Plan and implement a comprehensive public education programme which would embrace community participation in environmental matters;

(c)Incorporate into the national environmental programme the capability and mechanisms to participate in international and sub-regional environmental activities.

It was emphasized that legislation and management should grow from existing institutions. This can be facilitated through the establishment of interagency agreements where practicable.

While it is recognised that there is a need for the establishment of a central agency to co-ordinate the different activities, the Maritime Services Division, as mentioned in Chapter V, can be given the responsibility for ship-generated pollution and also as it applies to the activities of the offshore drilling units. The division could also become involved in the preparation and development of oil contingency plans.

Work has also commenced on educating the public (including the private sector), instilling an awareness of environmental problems and degradation of the marine environment. This was implemented through the electronic media. It also involved hosting a seminar titled '**Rivers and Waterways-our Business Protecting the Environment**' in which businesses and industries practicing good environmental methods(this included proper waste disposal practices) were highlighted.

In 1991, The Institue of Marine Affairs commenced data collection to obtain an assessment of liquid effluent discharges of major industries. The methodology applied was '***The Rapid Assessment Technology***', which involves a compilation of land-based sources of marine pollution. This is a positive step since data is necessary to assist in controlling pollution from land-based sources. It involves an estimation of pollution load per industrial process plus the sources of pollution (See Appendix 2a & 2b). To undertake this study, Trinidad & Tobago was divided into hydrometric areas.

6.5 MARITIME SAFETY

6.5.1 GLOBAL MARITIME SAFETY TRENDS

As mentioned in chapter IV, the international community has become increasingly aware of the need to improve the safety of shipping with the overall objective of reducing the number of collisions and the subsequent loss of life, property and damage to the marine environment.

It should be noted that safety at sea has always been a subject of concern to the international community, particularly since the beginning of this century. This concern has been followed by the realization that improvement in safety can only be achieved with international co-operation which has resulted in the development of a number of agreements.

Some of these were the result of formal conferences, an example being the first International Conference on Regulations for Preventing Collusions at Sea which was held in Washington in 1889. However, there was no formal machinery for arranging conferences or ensuring that deficiencies and gaps in maritime legislation were reviewed and corrected.

This situation underwent a change with the establishment of the International Maritime Consultative Organization in 1958(now the International Maritime Organization). Since 1959, its activities have led to the development of a number of conventions, protocols, codes, and recommendations. The conventions and protocols centred on the improvement of the vessel itself e.g. sub-division and stability; machinery and electrical installations; fire protection, detection and extinction; life-saving appliances; radio communciations; the safety of navigation; the carriage of grain and dangerous goods. Conventions and protocols have also been developed on pollution especially oil pollution, and also measures covering liability and compensation for oil pollution damage.

Therefore based on the afore-mentioned, there now exists a comprehensive international network of regulations and supporting codes and recommendations.

These have been accepted by governments who have given effect to these regulations through the enactment of national legislation and also expanded the role, functions and responsibilities of their maritime administrations to ensure enforcement and implementation of these regulations.

The most important I.M.O. conventions are now practically universal in their application.

For example, the Load Lines Convention applies to 97% of the world fleet, International Convention on Safety of Lives at Sea(SOLAS) 1974 to 96% and the International Convention on the Prevention of Collisions at Sea Regulations to 95%.[22]

In recent years much greater emphasis has been placed on the effective implementation of international standards by I.M.O. member states. Although, the responsibility for ensuring that ships meet I.M.O. standards lies primarily with the flag state, more and more governments are exercising port state control thereby improving enforcement through rigorous inspection programmes. An example of such a programme, is the Paris Memorandum of Understanding on Port State Control which has been signed by 14 European States.

Under this arrangement, they agree to inspect at least 25% of foreign ships visiting their ports to ensure that they comply with international conventions. Several other maritime countries have also strengthened their inspection programmes, and the result is that sub-standard ships are finding it increasingly difficult to escape detention.

" A ship shall be deemed to be 'sub-standard' if and when she has such deficiencies as are clearly hazardous to safety, health, or the environment on account of the non- compliance with relevant technical, social, or other safety standards applicable to the ship or her crew".[23]

Yet, many ships are still lost at sea with the loss in some cases of many lives. In 1987, 4,836 people were killed in the Phillipines when an overcrowded ferry collided with a tanker and caught fire. On 15 December 1991, in the Red Sea, an Egyptian ferry Salem Express hit a reef in bad weather and sank- over 470 people were killed.[24]

In February 1992, the House of Lords established a Select Committee on Science and Technology to examine the **'Safety Aspects of Ship Design and Technology'**. One of its aims was to examine whether safety was given sufficent priority in the design and technology of the ship, and are the regulators abreast of the changes in the technology of the industry e.g. new materials.

The committee examined the existing framework which governed the operations of the industry, a framework which appeared to be prescriptive and reactive, based on responses to when an incident occured. Apparently, while there have been commendable changes in the industry e.g. Quality Assurance, there is need to develop a new framework which will be performance-oriented, and more proactive.

The Committee came up with a number of recommendations some of which include:-

(i)That the Paris Memorandum of Understanding on Port State Control be extended to all coastal states in Europe and that under the aegis of I.M.O., other regions should be encouraged to introduce regional port state control arrangements similiar to that of the Paris Memorandum. It is hoped that through this strategy that sub-standard ships, and the ships of sub-standard flags could be effectively excluded from the major markets of the world and driven out of business.

(ii)The development of a Ship Safety Regime would involve two main tenents namely:-

(a)Primary Safety Goals for all aspects of ship operations, set by agreement through the International Maritime Organization. These would consist of standards of structural strength, stability, manoveurability, performance in a seaway, operational competence and safety management for every type of ship operation.

This was structured to achieve an acceptable level of risk, which has been pre-determined.

(b)**A safety case** for every ship trading commercially produced by the operator and approved and audited by the flag state. The safety case would demonstrate that the ship's operations could achieve the relevant primary safety goals, subject to prescribed conditions. These conditions would cover matters including maintenance, protective coatings and levels of corrosion; safety equipment; manning levels and crew competence; loadline and rates of loading and unloading; stresses on the hull; navigation and communciations equipment; and safety management systems.

This goal of a safety regime is attainable, but a number of conditions must be met. One of these will include the emergence of a **"safety culture"** across the whole of the shipping industry. The former will develop when ship designers are trained and accustomed to design to performance standards; when ship operators operate comprehensive safety management systems; and when reporting procedures have broken down the climate of secrecy which currently surrounds misadventures at sea; then the most important ingredients of a "safety culture" will be in place, and the shipping industry will be ready to take full responsibility for the safety of ship operations.[25]

6.5.2 MARITIME SAFETY POLICY FOR TRINIDAD AND TOBAGO.

As mentioned in chapter IV, Trinidad and Tobago has enacted the Shipping Act No. #24, 1987 which made provisions " for the registration and licensing of ships, matters relating to crews, safety of life at sea and matters incidental thereto ".

This act also led to the establishment of the Maritime Services Division, which is responsible for the regulation and development of safe shipping wherever they may be and all ships within the waters of Trinidad & Tobago. In addition, the country has acceded to one of the most important international conventions on maritime safety i.e the Convention on the Safety of Life at Sea, 1974.

These actions can be interpreted as/or signalling that with respect to maritime safety the overall objective is to improve the safety of the 'national fleet' i.e. the nation's responsibility as a flag state and also to foreign ships that are within the waters of Trinidad and Tobago.

A government's obligations under international conventions dealing with maritime safety are of three main types:-

(i) **As a port state** it must ensure that foreign ships visiting its ports are safe to proceed to sea and are not likely to cause severe pollution.

(ii) **As a flag state,** it must ensure that its ships meet the standards of the international conventions and that it carries out certain other duties in respect of safe manning, investigates casualties to ships and reports to the organization accordingly. These obligations apply to all ships entitled to fly the flag of the flag state.

(iii) **As a coastal state** it must ensure that various conventional and non-conventional services for safe operation of ships in port or coast be carried out and that a search and rescue system is provided to meet emergencies.

Therefore, countries have three basic responsibilities under international treaty obligations which they must fulfill:-

(i)A country has to ensure that ships flying its flag fully comply with the minimum standards prescribed in international conventions particularly as it relates to maritime safety;

(ii)In order to achieve compliance with(i) above, the national statues, maritime act/maritime code, etc. must suitably embody the basic requirements of the various conventions to enable the government authorities responsible for shipping to frame rules and regulations for the control of shipping services and ships' safety;

(iii)To establish an organization which will be capable of implementing and enforcing the relevant rules and regulations and ensuring safety of life and property, and environmental protection through proper and reasonable control.

Before ratifying, a state must be in a position to meet the requirements of international conventions as included in its articles and regulations.

Therefore any state which elects to become a party to certain international treaties must develop and re-inforce their national MARAD/MSA which will be responsible for the development, promulgation and enforcement of national regulatory regimes conforming to international agreements.

The Shipping Act No. #24 of 1987 contains provisions for the development of safety regulations for the protection of ships, crews, passengers and cargoes. However, guidelines on safety for port infrastructure, channels, seaways, littoral and ocean environments from the effects of marine accidents have not been included within the body of the act.

The problem for each adminstration is how to fulfill these international obligations for flag, port and coastal state activities without excessive costs and perhaps with limited numbers of qualified marine surveyors. However, given limitations of resources, consideration can be given to a division of responsibility between the maritime safety administration and the classification societies.

Trinidad and Tobago has acceded to the following International Maritime Conventions namely:-[26]

(i)International Convention on the International Maritime Organization, 1945(as amended)

(iv)Convention on the Facilitation of International Maritime Traffic, 1965(as amended);

(vi)International Convention on Load Lines, 1966.

(v)International Convention on Tonnage Measurement of Ships, 1969.

(ii)Convention on the International Regulations for Preventing Collisions at Sea, 1972;

(iii)International Convention for the Safety of life at Sea 1974;

(viii)Convention on Limitation of Liability for Maritime Claims, 1976(LLMC).

(vii)The Code of Conduct of Liner Conferences, 1979(UNCTAD).

(ix)Convention for the Suppression of Unlawful Acts against the Safety of Maritime Navigation(SUA).

Most of these conventions have not yet been ratified under national law. The country should also consider acceding to the following international conventions some of which include:-

(a)International Convention relating to Intervention on the High Seas in cases of Oil Pollution Casualties, 1969;

(b)International Convention on Civil Liability for Oil Pollution Damage, 1969 and the Protocol of 1984 relating thereto;

(c) International Convention for the Prevention of Pollution from Ships 1973, as modified by the Protocol of 1978 relating thereto;

(d) International Convention on the establishment of an International Fund for Compensation for Oil Pollution Damage, 1971 and the Protocol of 1984 relating thereto;

(e) Convention on the prevention of Marine Pollution by dumping of Wastes and other matter, 1972.

(f) Protocol relating to Intervention on the High Seas in Cases of Pollution by substances other than Oil, 1973;

(g) Protocol of 1978 relating to the International Convention for the Safety of life at Sea, 1974;

In order to influence the contents of these instruments, a state needs to have a clear perspective on its goals and aims for Maritime Safety and also a clearly enunciated policy on Maritime Safety. This will ensure that the national interests and nationally prevailing situations are taken into account when international law is made.

The Maritime Safety policy of a country should be dictated by international trends in maritime safety, which emphasizes the need for the continuous adoption of measures to reduce and subsequently eliminate casualties at sea.

Therefore, there will be a need not only to improve the safety of the 'national' fleet, but to extend this to include the operations of the inter-island vessels. Therefore a regional dimension should be considered, and ideally the national maritime safety policy should be a facet or component of a regional maritime safety policy.

As mentioned in chapter IV, the two main problems with respect to maritime safety relate to the operations of the 'national fleet' and the inter-island 'schooners' which ply between Trinidad & Tobago and the other islands of the Caribbean region.

Additionally, an agreement on Port State control has been concluded between the Maritime Services Division of Trinidad & Tobago and the Maritime Safety Authorities in St Vincent & the Grenadines and in Grenada.

This is a positive initiative which is in keeping with the recommendations of the **House of Lords Select Committee on 'Science and Technology for Ships'**, since one of the factors to improve the safety of shipping will involve greater international co-operation to ensure that ships are up to the required standards of safety.

The Maritime Services Division is the mechanism to assist in the formulation and implementation of maritime safety policies, and also developing and enacting the national regulatory framework.

A number of hindrances effecting the work of the Division have been enumerated. These include out-dated legislation and the need to develop regulations to give effect to the Shipping Act No. #24 of 1987. There is therefore a need to revise and enact new legislation. It will also involve accession to a number of conventions. This places further demands on the extremely limited resources of the Maritime Services Division.

Chapter VII will outline a number of strategies which could be adopted by the following agencies:-

(a)The National Shipping Corporation(SCOTT);

(b)The Port Authority of Trinidad and Tobago(PATT);

(c)The Environment with emphasis on pollution control from land-based sources and;

(d)Maritime Safety.

NOTES AND REFERENCES.

1. Chrzanowski, I.-An introduction to shipping economics, ed. Wiater S.J,. Fairplay Publication Ltd.

2. Totland, T. "Protectionism in international shipping and some economic effects.", Maritime Policy & Management 1980, Volume 7, No.2, 103-114.

3. Chrzanowski, I. An introduction to Shipping Economics, pp.116.
ed. Wiater, S.J.,. Fairplay Publications Ltd.

4. Frankel, E.G.-Shipping and its role in economic development. Malmo, Sweden.

5.Adar Uri (President of Zim American Isreali Shipping Company Inc.) ` Global Trends in the Caribbean'.

6. Frankel, E.G-Shipping and its role in economic development pp.1, Malmo, Sweden.

7. All english-speaking countries of the Caribbean which were former British colonies.

8. Guidelines for the formulation of a national shipping policy for the Republic of Trinidad & Tobago (1981).

9. INTERTANKO-tanker shipping and the developing countries.

10.Policy paper-Infrastucture Sea transportation presented at the First Causus on Infrastructure contributing to the Draft Medium Term Macro-Planning Framework 1989-1995 in November 1989.

11. Excerpt from a series of lectures by Professor P. Alderton on Port Administration.

12. Goss R.O Professor-Economic policies and seaports; Maritime policy & Management, 1990, Volume 17, No. 3;

- " Are port authorities necessary?" pp. 257-271.

13. ECLAC- The restructuring of public-sector enterprises: The case of Latin American and Caribbean Ports.

14. IBID-Chapter IV, pgs 43-55.

15. Excerpt from a lecture provided by the Institue of Marine Research on Swedish marine resources and the environment, 8. 09. 1992.

16. Quing-Nan M,. Land-based Marine Pollution(1987). Graham & Trotman/Martinus Nijoff.

17. IBID.

18. Davis W.J., 'Global aspects of marine policy', Marine Policy- Vol. 14 No.3 May 1990.

19. IBID- Pg. 193

20. Kenchington R.A.-Managing Marine Environments. Taylor & Francis, New York * Bristol, P.A. & Washington D.C. London.

21. Rampersad, K., "Regional Environment suffering:Too many people", Trinidad Guardian 8 January 1992.
_____. " Problems with quarrying must be top of the list",_____.

22. Srivastava, C.P., 'Safer ships and cleaner oceans: thirty years' work of the International Maritime Organization'. Transport Reviews, 1989, Vol 9, No. 1, 45-57.

23. Kim J. E., 'The optimum maritime policies of a government for the promotion of safety at sea and the protection of the marine environment'. MSc. Diss. 1989, World Maritime University.

24. House of Lords Select Committee on Science and Technology- Safety Aspects of ship design and technology.

25. IBID, pg.73, para. 11. 36

26. Squires M.- 'A proposal for the establishment of an adequate maritime administration in Trinidad and Tobago'. MSc. Diss. 1986, World Maritime University.

CHAPTER SEVEN

CONCLUSIONS & STRATEGIES FOR PORTS, SHIPPING, MARINE ENVIRONMENT AND MARITIME SAFETY.

7.1 INTRODUCTION.

The maritime policy for Trinidad and Tobago should be a reflection of the goals and objectives identified for the ports, shipping, and marine environment/maritime safety sectors.

Ideally this policy should be developed within the overall context of a regional maritime policy, since some of the problems and issues, which have been outlined, require a regional approach.

Some of these include:-

(i)Over-tonnaging of ships;

(ii)The creation of regional shippers' councils;

(iii)Port State control particularly with respect to the operations of the inter-island vessels.

(iv)Rationalization of port development in light of the present trend towards 'load-centre' and 'feeder' ports. This will avoid the risk of over-investment by each port in the region. There could be an inter-governmental agreement on which country should be the 'load-centre' or 'transhipment' port.

(vi)Ancillary maritime facilities e.g. Ship-yard repair and ship-building facilities.

(v)Environmental degradation and pollution control. In this respect, work is currently being undertaken through the Regional Seas programme.

7.1.1 MARITIME POLICY FOR TRINIDAD & TOBAGO

Some of the goals and objectives of this maritime policy should include:-

(i)The development of the `national' fleet;

(ii)The cost-effective and efficient development and management of the major ports given the critical role defined as a conduit for the imports and exports of the country;

(iii)The strengthening of Maritime Services Division by the provision of adequate resources;

(iv)The rationlization of the operation of the National Shipping Corporation(SCOTT) given its role as a carrier of the imports and exports of the country;

(v)The development of adequate maritime training facilities;

(vii)The protection and conservation of the marine environment from ship-generated pollution and also from land-based sources of pollution.

The maritime policy should have as its main tenets:-

(i)Through restructuring and rationalization, the development of commercially-oriented and efficient port and shipping industries to assist in national economic development and growth;

(ii)To the extent feasible, the creation of a pollution-free environment through the reduction and elimination of pollutants from source to destination by the year 2000;

(ii)In their attempt to achieve(i) all efforts should be made to enhance the quality of life of present generations, however the ability of future generations to sustain themselves must not be jeopardized. Therefore plans and proposals considered for implementation by the various industries must be inter-woven with strategies for maintenance of the environmental resources.

7.2 SHIPPING CORPORATION OF TRINIDAD AND TOBAGO(SCOTT).

In order to facilitate the participation of SCOTT in the carriage of the imports and exports, it may be necessary to implement a cargo-sharing formula. This will consist of the following:-

(a)It may be necessary to issue informal directives and introduce fiscal incentives e.g tax rebates to encourage state enterprises and private companies to designate SCOTT as their official carrier.

(b)A more feasible option to the UNCTAD Code of Conduct may be the implementation of a flexible multilateral cargo-sharing formula. The Code should be re-considered for implementation in its present form; since one of the main factors is that the major trading of the country i.e. United States of America is not a signatory to the Code.

SCOTT should consider the acquisition of more vessels for the bulk trade in ammonia, methanol and urea. Given the difficulties in the obtaining of new financing for new and second-hand vessels, SCOTT could consider engaging in lease financing which will entail the following three options:-[1]

(a)Financial leasing where the lessee is responsible for all repairs and maintenance. The lessor signs the ship-building or ship purchase contract, and the lease agreement is affected by means of a bare-boat charter party over the agreed period of the lease.

The lease agreement may also include a right to purchase the assets at the expiration of the lease at agreed terms.

(b) Installment sale leasing is another lease financing arrangement. It is used when the lessor is unwilling to assume ownership of the asset because of a tax or legal position. In this case, the lessor purchases the vessel and simultaneously transfers ownership to the shipowner who then makes payments on installments. To secure sale proceeds, lessors will usually take a mortgage on or place liens against the vessel.

(c) Barter trade of newer technologically advanced second-hand surplus ships against the scrap value of obsolete tonnage. This approach would require interim financing of the difference in market value of the obsolete tonnage it would replace. By this means the country would acquire modern efficient tonnage. Such swap arrangement would be a relatively inexpensive means of acquiring new tonnage.

Given the dearth of trained manpower in the maritime sector of the country, and the high level of expertise currently required because of the advanced level of shipping technology, it may be necessary for SCOTT to engage in an interim arrangement for crewing and management skills. A management contract to acquire the necessary expertise to operate the ships may be further explored. Please note that SCOTT is already engaged in a management contract with Bibby line and Denholm. These arrangements should be terminated when local personnel acquire the necessary skills.

SCOTT should consider an expansion of its services. For example the decoupling of the Government Shipping Service(responsible for the operation of the two intra-island ferries) from PATT, and the exploration of their incorporation into the National Shipping Corporation.

Given the trend towards the development of 'load-centre' ports and land-bridges, areas should be identified where there is scope for the expansion of sea transport. For example, where land transport is currently non-existent or cannot be sufficiently developed to provide competition. In this respect an area to be explored is coastal shipping i.e between the islands of Trinidad and Tobago, where there is no land-bridge, and passengers and cargoes are heavily dependent on this mode of transport, particularly since the cost of air transport between the two islands is somewhat prohibitive. There could be further expansion into the provision of leisure cruise activities.

As mentioned, the state will have to give priority to the establishment of other ancillary services e.g.
(i)A shipping Investment Fund
(ii)Development of a marine insurance market.

7.3 MARINE ENVIRONMENT-CONTROL STRATEGIES FOR LAND-BASED MARINE POLLUTION[2].

In the development of control strategies for land-based pollution, a number of factors must be taken into account in addition to the level of scientific and technological capabilities within a country.

These factors will include the social, political and cultural circumstances of the country. In some cases, economically sound control measures may not be socially or politically acceptable; in other cases, measures will have to be taken in order to achieve a particular social or political goal regardless of their economic worthiness.

It is also necessary to reconcile the interests of competing groups and make decisions that will benefit the state as a whole. These competing groups will include fishermen, industralists, environmentalists and consumers-all seeking their own interests.

The state's ability to implement pollution control strategies and measures would be dependent on the availability of money, technology and qualified personnel.

Pollution control actions, therefore, should not be implemented unless the related control actions can be afforded. If after an evaluation of the above-mentioned resources, it is estimated that it will be difficult to implement all the necessary actions, the goals identified may need to be revised or the implementation divided into different stages or even abandoned.

The control of land-based pollution involves four phases namely:-

(a)Collection of basic information.

(b)Assessment of pollutant impacts on the environment.

(c)Design of control strategies and implementation of programmes;

(d)Evaluation

(A)COLLECTION OF BASIC INFORMATION.

This will require an analysis of the substances that may be introduced into the marine environment, their sources, pathways, potential targets, the general characteristics of the marine environment concerned and the available technology for pollution control.

(B)ASSESSMENT OF ENVIRONMENTAL IMPACTS.

The assessment of how a pollutant impacts on the environment is critical. This will include the identification of targets and possible targets at risk, identification of pathways by which the pollutant may reach the targets at risk, selection or derivation of standards, by utilizing existing standards or using standards achieved by data from similiar cases.

It will also include calculation of environmental capacity and also the determination of acceptable discharge rates, which are equal to the maximum allowable rate of discharge.

(C)**CONTROL ACTIONS AND IMPLEMENTATION.**

(i)Improving management i.e. aiming at a reduction of substances introduced in variety, quantity and toxic quality. This will focus on producers and users of pollutants from land-based sources. For new installations an environmental impact assessment should be undertaken.

(ii)Regulatory measures- laws and regulations which aim at achieving the minimum proposed standards of prevention, reduction and control of environmental degradation. This will include environmental quality standards, emission standards and specification standards.

(D)**EVALUATION**

Evaluation-the effectiveness of the control measures are evaluated by monitoring changes in the state of the marine environment.

The financing of pollution control strategies normally involves public intervention, since it requires either ensuring that the **'polluter pays'** for the abatement measures or it is undertaken by the state itself i.e the **'society pays principle'(if such a concept can be used).** In the case of the former, the polluter should bear the expenses of carrying out measures decided by public authorities to ensure that the environment is in an acceptable state.

On the other hand, the latter implies that responsibility for pollution abatement measures shifts from the polluter to everyone in society by the utilization of money collected through taxes.

The quality of the marine environment and its enhancement is free to be enjoyed by all. It is a 'public good', 'non-exclusive' in nature meaning that everyone including those who have not paid will benefit from an improvement in its quality.

Therefore, producers will not, on their own accord, implement pollution measures for a 'free' resource nor make provisions for a clean-up, since normally they are unwilling to supply where they cannot secure payment. The latter cannot be enforced where the consumer cannot be restricted from its enjoyment, even if he refuses to pay, nor are consumers of his product willing to pay for those who cannot be exclude from the improvements which may result from actions taken by the producers.

To resolve this situation, it normally requires state intervention.

Public intervention may involve:-

(a)**Public Control actions or services**-these include municipial waste treatment measures, public health services, education programs on the need for environmental protection, basic scientific research, and services to spread advanced technology.

(b)**Subsidies**-society pays a portion of the costs of pollution control. This encourages the polluter to take control measures seriously.

(c)**Tax-related measures,** which can be divided into:-

(i)**Pollution Tax**-the imposition of a tax which is equivalent to the additional social cost of pollution. In order to reduce the tax, the polluting firm must institute control measures.

(ii)**Tax Incentives**-this is the deduction of taxes in return for measures leading to pollution control.

This is aimed at encouraging firms to invest in the improvement of treatment technologies and processing, and even to encourage them to move away from environmentally sensitive areas.

(d)**Environmental Standards**-Environmental Standards(quality standards, discharge standards, specification standards). These are pollution control measures derived from scientific and technological considerations. Violation of standards actually result in a fine or other punishment, such as suspension of production or termination of business.

(e)**Effluent Charges**-This is based on a sliding time-scale. The longer the discharge goes on, the higher the charges will be. Initial and future charges are(or should be) sufficiently high to induce the industry to invest in treatment technology or process change.

(f)**Pollution Rights**-the permissible level of pollution is assessed and the " rights" to pollute are then sold on the market. Firms needing to discharge pollutants bid for these rights, the price of which is determined by demand. This approach is intended to keep permitted discharges under permissible levels. It should be recognised that the application of either principle has implications for the economic growth of the country.

In the case of the '**polluter pays**' principle this will be seen in two ways:-

(a)The consumer pays an increased price for the commodity and depending on elasticity of demand may reduce his consumption of that particular commodity or shift his money from other uses with implications for the industry/ies that produce these commodities.

(b)On the international side, the price increase will reduce the international competitiveness of the product. If the import price is lower than the domestic market, the producer may even lose his domestic market.

On the other hand, if **'society pays principle'** is adopted, this means that either regular taxes will be increased and individual net income (income after the deduction of taxes) decreased, in which case the individual's purchasing power will be reduced or weakened, or governments may have to cut their spending on major social programmes e.g. education and health.

However, it may also strengthen the international competitiveness of goods against countries who have adopted the **'polluter pays' principle.** Alternatively, it provides no incentive for the polluters to take pollution control measures, therefore society continues to pay for pollution abatement constantly and increasingly.

The required funding for pollution abatement is one of the major dilemnas that would face a state/government, particularly when there are other competing priorities for limited resources e.g. education and health and where resources are also very limited. It may involve a certain amount of 'trade-offs'. Initially, this may mean that less money would be available in the economy for investment towards economic development.

In the short-term, pollution abatement is a burden on economic development; in the long-term it enhances the latter, since the preservation of living resources and the improvement of human health(labour) are benefical to, indeed essential for economic development.

A given level of government funding would be needed for administration, scientific research, treatment facilities for muncipial wastes, subsidies to fundamental industries in the national economy, and tax incentives.

In the case of Trinidad and Tobago, its macro-economic policies are becoming more export-oriented and encouragement is been given to industries to export more products. Its pollution control programmes may initially have to be two-tiered meaning that certain industries may have to be given positive incentives e.g subsidies, while the more established industries e.g oil companies could be required to pay a tax. Additionally, tax administration and collection is normally a complicated process, and in some cases the taxes obtained do not compensate for the overall expenditure on the administration.

Finally, the implementation of control strategies will be assisted by the establishment of an international regime on land-based pollution. This will facilitate co-operation in scientific research and technological development.

7.4 MARITIME SAFETY

In addition to the country's actions as a flag and port state, the approach to maritime safety definitely involves a regional dimension, particularly with respect to the operations of the inter-island vessels which ply between Trinidad & Tobago and the other islands of the Caribbean.

Given the key role to be played by the Maritime Safety Administration of a country, it is necessary to strengthen the operations of the administration through the provision of adequate manpower and resources so that the organization can effectively discharge its functions as outlined in the Shipping Act No.#24 of 1987. This staff can be drawn from the existing pool of World Maritime University graduates.

This should also include the development of the regulations as it pertains to the Act e.g licensing regulations.

It should be noted that a number of regulations have been developed namely:-

(a)The Shipping (Registration of Ships) Regulations, 1987.
(b)The Shipping (Tonnage) Regulations, 1988.
(c)The Shipping (Certificates of Proficiency in Survival Craft) Regulations, 1988.

There should be accession to international conventions and their ratification and incorporation into national legislation. This will also include the ratification of a number of conventions to which the country has already acceded. A list of these conventions are provided in Chapter VI.

The revision of out-dated legislation e.g The Oil Pollution of The Territorial Waters Act, Chapter 37:03(Act 25 of 1951) should be addressed. This is important for the effective implementation of responsibilities as it pertains to the protection of life, property and the protection of the marine environment.

There should be further extension and development of Port State Control at a regional level. This should be incorporated as part of an overall regional policy on maritime safety and should have the overall support of the respective island governments.

A public awareness programme for seafarers e.g. the owners of pleasure craft, fishing vessels and also inter-island vessels concerning the importance of acquiring life-saving equipment and radiocommunciations on board vessels should be undertaken. This is an effective mechanism in addition to the development of further legislation on fishing vessel safety.

Financing shoud be provided for the replacement of sub-standard tonnage particularly for the operators of the inter-island vessels. This may also include financing for the purchase of life-saving equipment and radio-communciations.

To ensure that the vessels of the 'national fleet' and inter-island fleet are up to required standards of safety, it is suggested that initial and periodic surveys be undertaken. This will necessitate the training of a number of marine surveyors and inspectors which can also be shared regionally given the limited manpower resources. These could also assist in the training of operators in the use of their vessels in addition to the enforcement of the law.

The introduction of data collection, i.e the compilation of statistics on maritime casualties and accidents is needed. This should be done nationally and regionally. At a national level, this exercise can be facilitated by the introduction of a computerised information system in the Maritime Services Division. Data that is collected regionally and inter- nationally could be fed into this system. This means that inter-linkages must be created between the different systems. This could assist in detecting the causes of these casualties and assist the work of the casualty investigator with the overall aim of the reduction and elimination of the causes of these accidents. This will complement the work suggested by the House of Lords Select Committee on 'Ship Design and Technology'.

The further expansion of training programmes, as mentioned in Chapter V.

7.5 PORT AUTHORITY OF TRINIDAD AND TOBAGO(PATT).

As mentioned, the Port Authority has embarked 'on the road' to financial and economic self-sufficiency by restructuring its operations.

One of the first initiatives was measures designed to reduce its staffing levels. Efforts are also being made to reduce the service time and turnaround time of vessels. This is of major significance to the modern-day ship, particularly since the daily operating costs of these vessels are very high and the overall objective of their operators is to minimize the time spent in ports, since the more time spent waiting for service impacts on its daily cost.

A number of concordats have been negotiated with the government in areas which have commercial and management implications, such as labour, costs, productivity and technological improvements. The government reduced its involvement in such matters, within certain limits, to ensure that the port could provide needed services and also achieve its goal of financial self-sufficiency. Through these agreements the Port Authority has re-acquired the commercial management of port operations.[3]

PATT should also implement a number of additional strategies if it is to achieve the needed transformation of its operations.

PATT proposes to continue with its plans to rationalize its labour. Attempts are being made to remove the distinction between long-shore and stevedore labour, and the introduction of a two-shift system with a 'fresh' batch of workers to work on each shift. This will assist in increasing labour productivity and also the turnaround time of the ship.

There is a need to up-date and revise the act governing the operations of the Port Authority of Trinidad and Tobago which will assist in its transformation in becoming a more commercially viable venture to incorporate the participation of the private sector in its operations as recommended in Chapter VI.

The act could be amended to allow for the de-coupling of the Government Shipping Service. Additionally, there is a need for an act to establish an agency that will be responsible for governing the operations of all ports whether private or public.

In the planning of its development projects, PATT should incorporate environmental management. In the development of its latest project i.e its **Waterfront Development Plan,** the views of the environmentalists in the country were solicited. However, environmental management should also include an environmental audit which will detail the environmental impact of a port and its activities on the environment, and also provide information on measures to mitigate these impacts.

In the planning process of a project for the 1990's, an initial environmental assessment should be undertaken at the pre-feasibility stage of the project, and not after the decision has been made to implement the project; port managers should be required to inter-weave environmental appraisals with their investment appraisal techniques.

Because of the expense of such an undertaking, the Port Authority may have to consider implementing this approach on a modified scale until they are able to devote more resources to undertake a more comprehensive analyses.

The audit should detail, in tabulated and map formats, the handling and storage areas of prescribed materials, waste emissions, spoil disposal areas, dust and noise zones, and all other sources of pollution.

It should also detail areas of fishing, wetlands, zones of specific or cultural interest, recreational areas, urban and industrial installations.

The purposes of such an audit will include provision of a proper basis for identification of priorities in environmental protection, where and how regulations, e.g. International Maritime Dangerous Goods Code(I.M.D.G.), are being applied and an indication of the degrees of conflict between uses and the interests involved.[4]

In order to compile and implement the environmental audit it will be necessary to convene ad-hoc inter-sectoral teams at the port. These can be drawn from the various ministries, divisions and organizations with responsibilities for the environment. For example PATT may need to consider representatives from the Ministry of Works & Transport, Town & Country Planning Division, Environmental Division (Ministry of Planning and Development), Institue of Marine Affairs and Ministry of Finance.

PATT should continue with its training programme, which is an integral aspect of the transformation and restructuring of activities of the port. The training is important to ensure continuity and improvement of their activities, but especially to cope with technological change. Currently there is co-operation with other islands in the Caribbean region on port training utilizing a number of modules that have been developed by **UNCTAD/UNDP TRAINMAR**. An example of this is a programme on '**Port Equipment Maintenance**'.

In conclusion, the author will like to emphasize the importance of a maritime policy for Trinidad & Tobago, which will facilitate the growth and development of the maritime sector. An analogy can be drawn between a policy and a compass, since without the latter, it is normally difficult to determine the road to pursue, although one may have a pre-determined destination.

Additionally, this policy should be developed alongside the country's economic policy, since most of the goods produced are for external markets i.e. they must be shipped!. In order for these products to be sold internationally, and thereby earn the vital foreign exchange, they must be competitive, arrive safely and efficiently at their destinations. The maritime sector, particularly as it relates to shipping and ports industries, therefore has a key role to play to ensure that the latter objectives are achieved. The country's marine resources has contributed and will always contribute to the economic survival and welfare of the nation. These, too, must be protected and preserved so that future populations will derive maximum benefit.

The intention of the paper was, therefore, to provide an overview of the key and pertinent issues to be considered in the formulation of a maritime policy for Trinidad & Tobago.

NOTES AND REFERENCES.

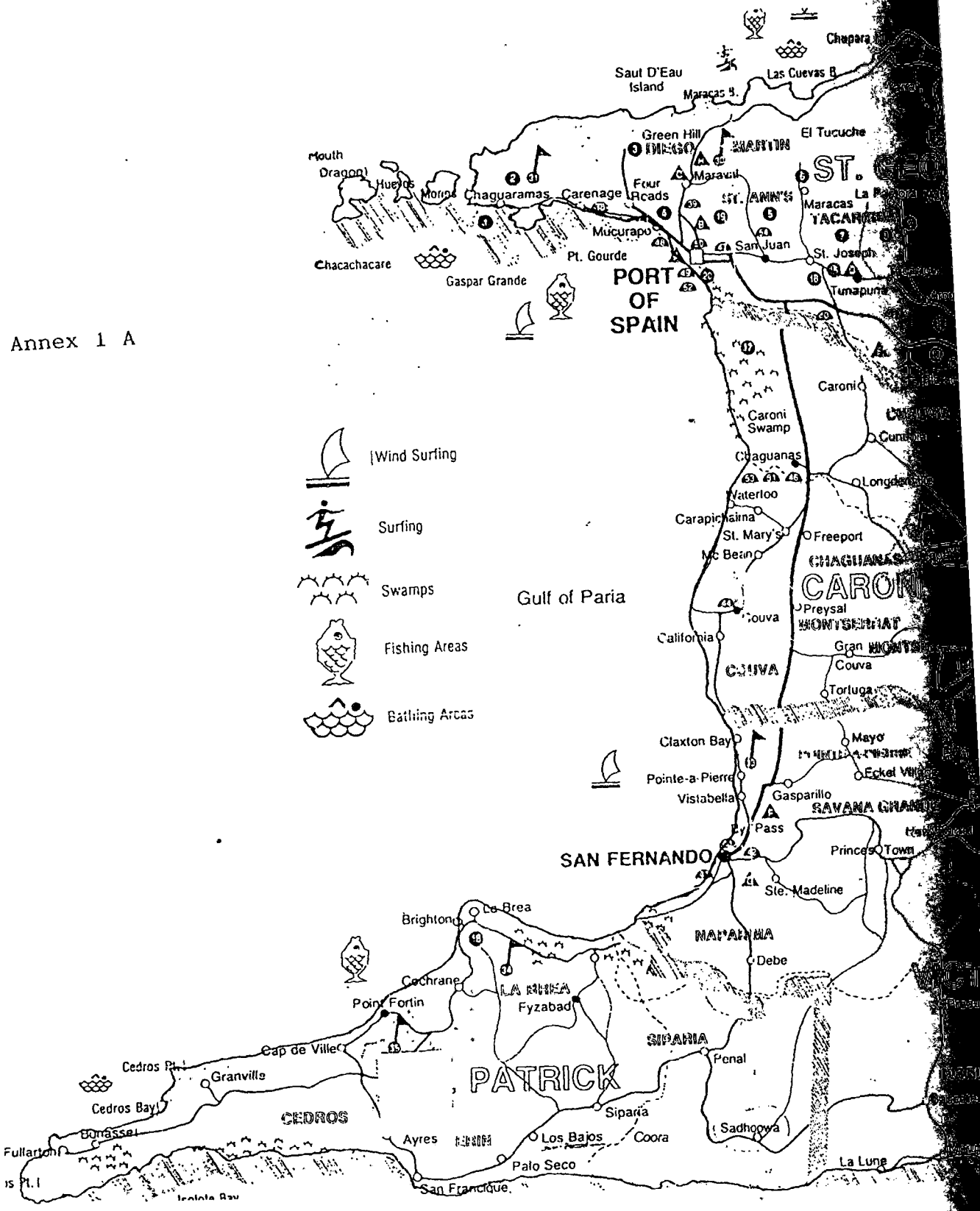
1. Frankel, E.G.- Shipping and its role in economic development, pp. 20-21, Seminar on Maritime Policy, World Maritime University, Malmo, November 1988.

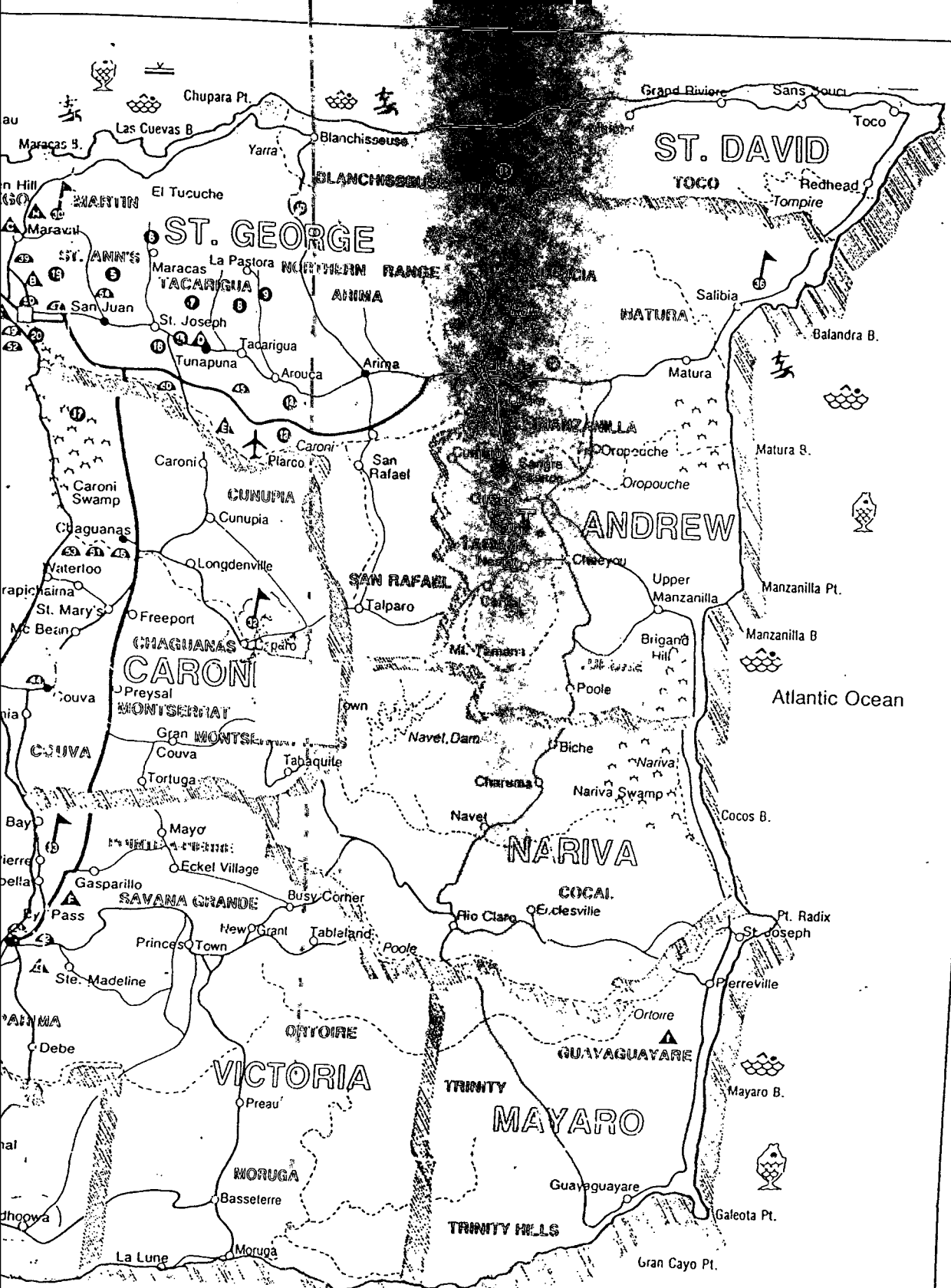
2. Quing-Nan, M., Land-based marine Pollution, pp. 18-51. Graham & Trotman/Martinus Nijhoff(1987). This is a summary of a Chapter on Scientific, Economic and Social Dimensions of Land-based Marine Pollution Control.

3. Report of the meeting of experts on the creation of intra-port competition in the Caribbean, Port-of-Spain, Trinidad & Tobago, 5 December 1991.

4. Couper, A.D., " Environmental port management". Maritime Policy Management Volume 19, No.2, 165-170.

Annex 1 A


Wind Surfing
Surfing
Swamps
Fishing Areas
Bathing Areas
Gulf of Paria
PORT OF SPAIN
SAN FERNANDO
Saut D'Eau Island
Las Cuevas B.
Maracas B.
Green Hill
El Tucuche
Mouth Dragon
Huevos
Monos
Chaguaramas
Carenage
Four Roads
Maraval
ST. ANN'S
Maracas
TACARIGUA
Mucurapo
San Juan
St. Joseph
Pt. Gourde
Chacachacare
Gaspar Grande
Tumapuna
Caroni
Caroni Swamp
Chaguanas
Waterloo
Carapichaima
St. Mary's
Freeport
Mc Bean
CHAGUANAS
Preysal
California
Couva
Gran Couva
Tortuga
Claxton Bay
Mayo
Pointe-a-Pierre
Eckel Village
Vistabella
Gasparillo
SAVANA GRANDE
By-Pass
Princes Town
Ste. Madeline
Brighton
La Brea
MAYARO
Debe
Cochrane
LA BREA
Point Fortin
Fyzabad
SIPARIA
Penal
Cap de Ville
Cedros Pt.
Granville
PATRICK
Cedros Bay
CEDROS
Siparia
Bonasse
Ayres
Los Bajos
Coora
Sadhoowa
Fullarton
Palo Seco
La Lune
San Francique


Chupara Pt.
Las Cuevas B
Maracas B.
Yarra
Blanchisseuse
El Tucuche
MARTIN
ST. GEORGE
ST. ANN'S
Maracas
La Pastora
TACARIGUA
ANIMA
NORTHERN RANGE
San Juan
St. Joseph
Tacarigua
Tunapuna
Arouca
Arima
Caroni
Caroni
Plarco
San Rafael
Caroni Swamp
CUNUPIA
Cunupia
Chaguanas
Waterloo
Longdenville
St. Mary's
Freeport
Mc Bean
CHAGUANAS
CARONI
Preysal
MONTSERRAT
Couva
COUVA
Gran MONTSERRAT
Couva
Tabaquite
Tortuga
Bay
Mayo
Eckel Village
Gasparillo
SAVANA GRANDE
Busy Corner
Pass
New Grant
Princes Town
Tableland
Ste. Madeline
ANIMA
Debe
ORTOIRE
VICTORIA
Preau
MORUGA
Basseterre
La Lune
Moruga
Grand Riviere
Sans Souci
Toco
ST. DAVID
TOCO
Redhead
Tompire
Salibia
NATURA
Balandra B.
Matura
Matura B.
Oropouche
Oropouche
ANDREW
Chaguyou
Upper Manzanilla
Manzanilla Pt.
Manzanilla B
Brigand Hill
Poole
Atlantic Ocean
Navet Dam
Biche
Nariva
Charuma
Nariva Swamp
Navet
Cocos B.
NARIVA
COCAL
Rio Claro
Ecclesville
Pt. Radix
St. Joseph
Poole
Pierreville
Ortoire
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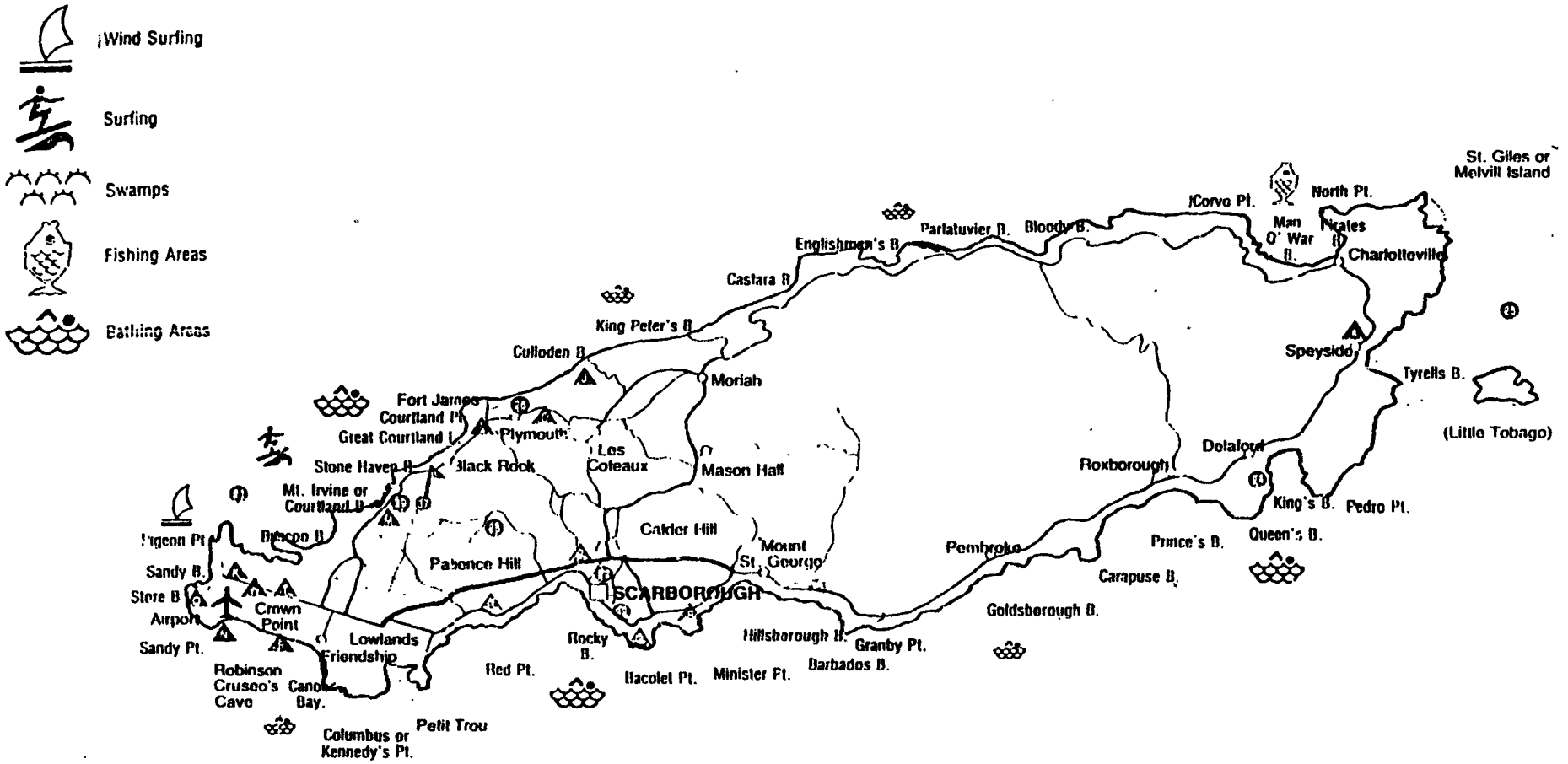
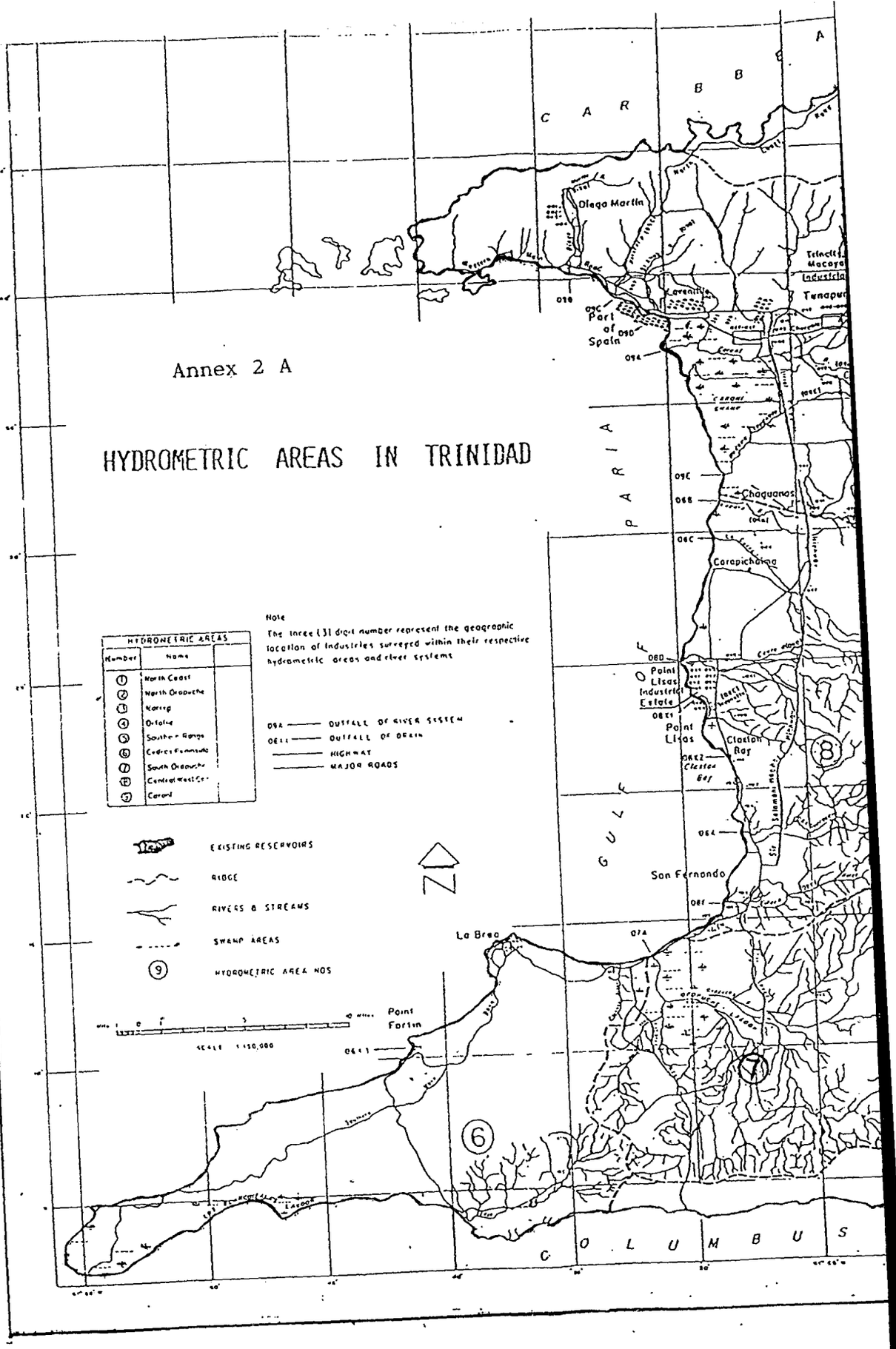
TRINITY
MAYARO
Guayaguayare
Galeota Pt.
TRINITY HILLS
Gran Cayo Pt.

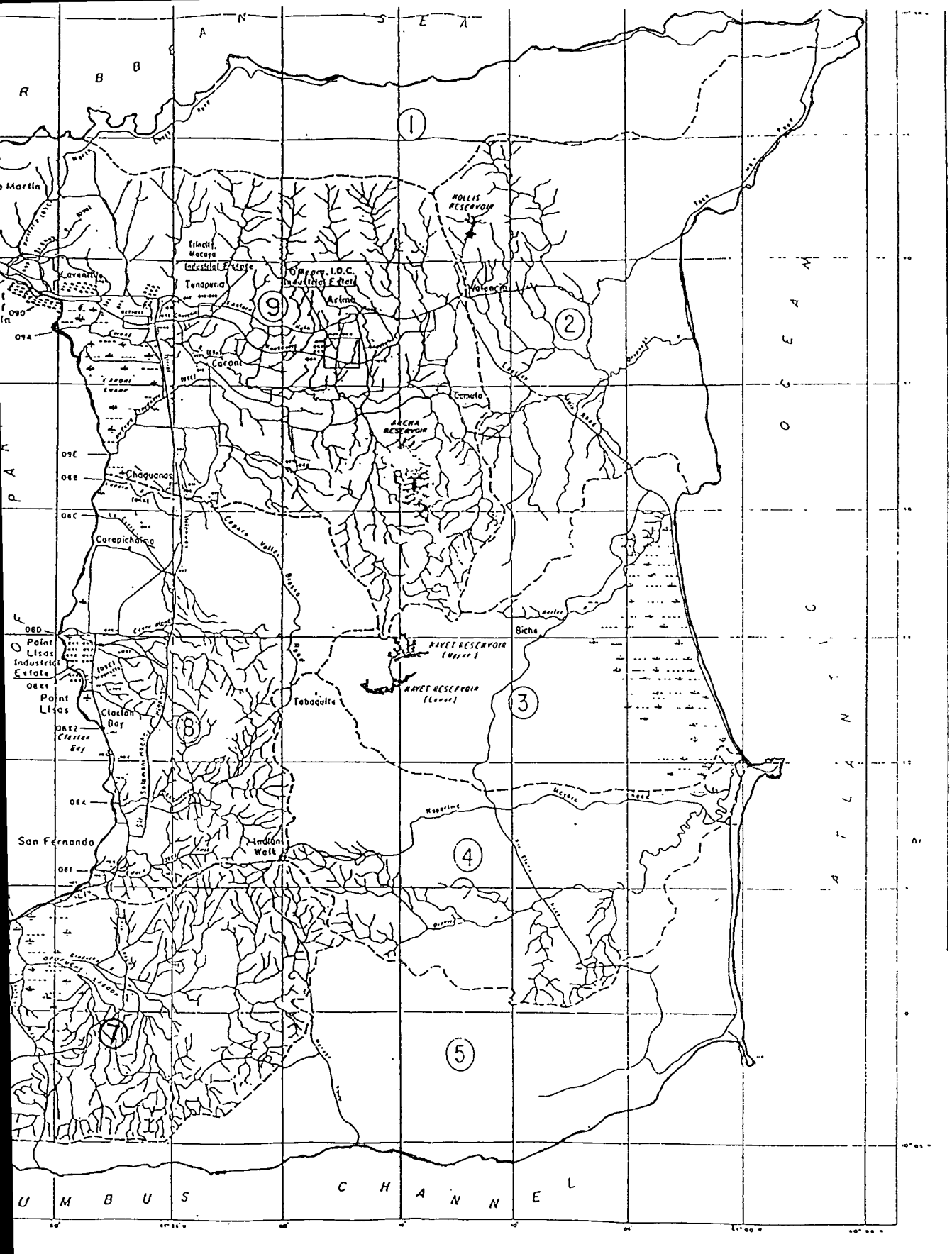

Wind Surfing
Surfing
Swamps
Fishing Areas
Bathing Areas
St. Giles or Melvill Island
North Pt.
Corvo Pt.
Man O' War B.
Scales B.
Charlotteville
Parlatuvier B.
Bloody B.
Englishman's B.
Castara B.
King Peter's B.
Culloden B.
Moriah
Speyside
Tyrells B.
(Little Tobago)
Fort James
Courtland Pt.
Great Courtland B.
Plymouth
Stone Haven B.
Black Rock
Los Coteaux
Mason Hall
Roxborough
Delaford
Mt. Irvine or Courtland B.
King's B.
Pedro Pt.
Bacolet Pt.
Calder Hill
Mount St. George
Pembroke
Prince's B.
Queen's B.
Sandy B.
Store B.
Airport
Crown Point
Pigeon Pt.
Bacolet B.
Pabence Hill
SCARBOROUGH
Carapuse B.
Goldsborough B.
Sandy Pt.
Lowlands
Friendship
Rocky B.
Hillsborough B.
Granby Pt.
Barbados B.
Robinson Crusoe's Cave
Canoe Bay.
Red Pt.
Bacolet Pt.
Minister Pt.
Columbus or Kennedy's Pt.
Petit Trou

Annex 1 B

Annex 2 A

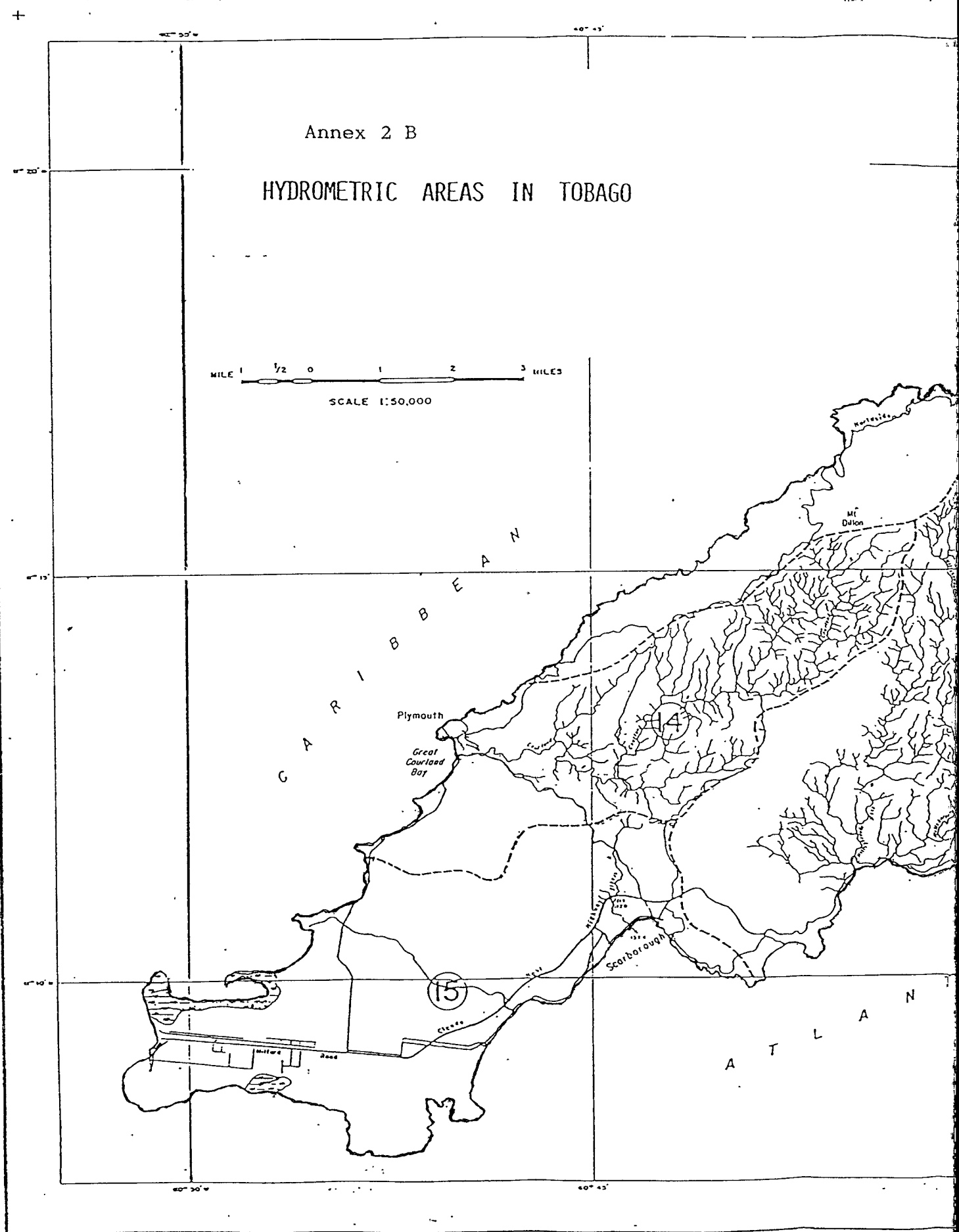
HYDROMETRIC AREAS IN TRINIDAD

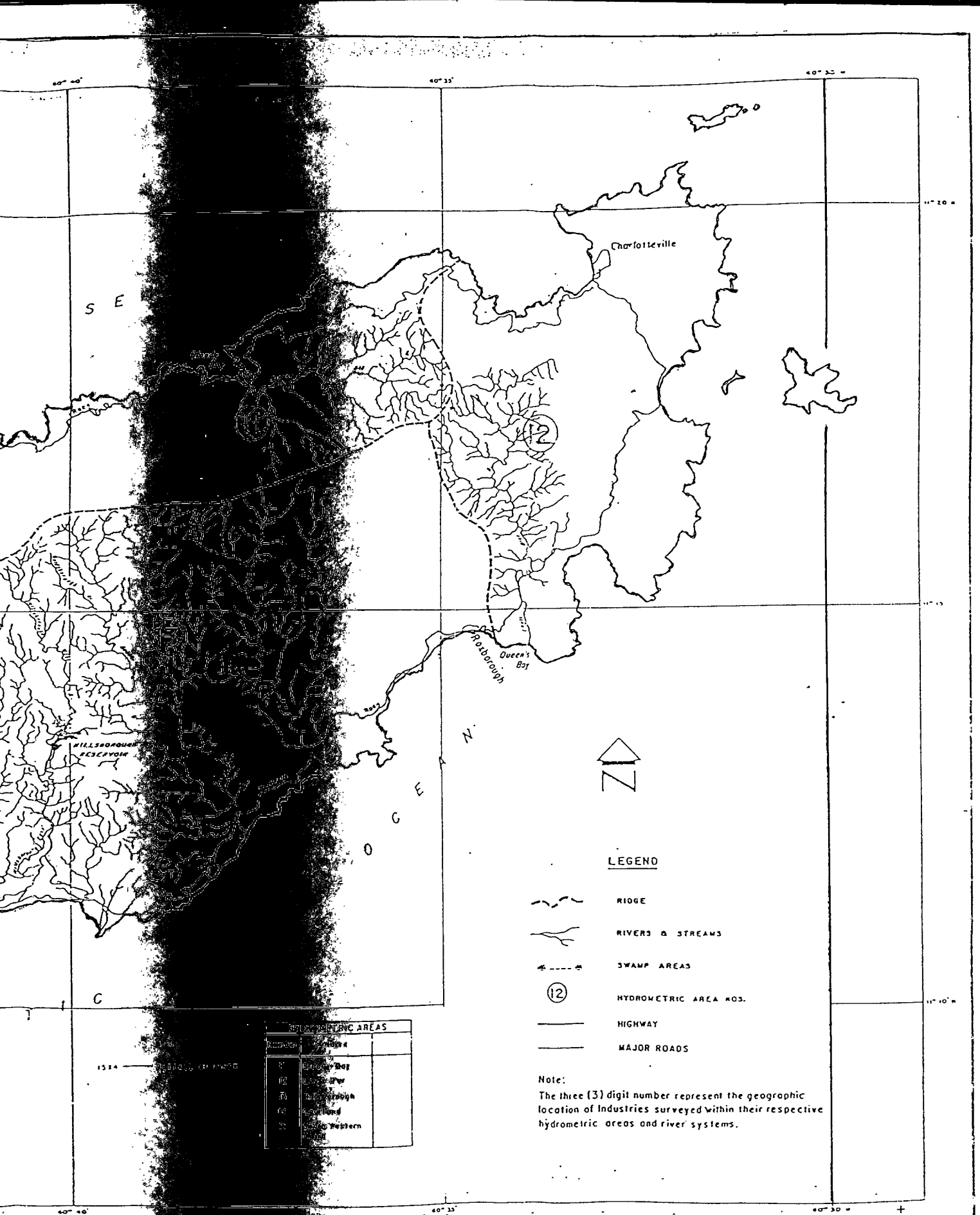



ATLANTIC OCEAN
MOCAL CHANNEL
Point Lisas Industrial Estate
Point Lisas
Claxton Bay
Chaguanas
Carapichaima
Couva
Tabaquite
Hollis Reservoir
Arena Reservoir
Navet Reservoir (Upper)
Navet Reservoir (Lower)
Valencia
Arima
Caroni
Tunapuna
Macoya Industrial Estate
Piarco I.D.C. Industrial Estate
Laventille
Maraval
Diego Martin
San Fernando
Indian Walk
Icacos
Gasparillo
Cedros
Penal
Debe
Princes Town
Rio Claro
Mayaro
Guayaguayare
Biche
Toco
Matura
Sangre Grande
Manzanilla
Plaisance
Caroni Swamp
Nariva Swamp
Oropouche Lagoon
Caroni River
Ortoire River
Guaracara
Mayaro Bay
Galeota Point
Icacos Point
Erin
Moruga
Basse Terre
Cedros Bay
Claxton Bay
Couva River
Caroni Valley
Nariva Swamp
Oropouche Lagoon

Annex 2 B

HYDROMETRIC AREAS IN TOBAGO




Charlottetville
Queen's Bay
Peterborough
12
N
LEGEND
RIDGE
RIVERS & STREAMS
SWAMP AREAS
(12) HYDROMETRIC AREA NOS.
HIGHWAY
MAJOR ROADS
Note:
The three (3) digit number represent the geographic location of Industries surveyed within their respective hydrometric areas and river systems.

BIBLOGRAPHY.

A. BOOKS, REPORTS, STUDIES.

1. Assignment of responsibilities to Ministers and Parliamentary Secretaries(1992). The Government Printery, Port-of-Spain.

2. Caribbean Community Secretariat, (July, 1990) Proposed Restructuring and Operational Plan (1990-1993) for the West Indies Shipping Corporation -Evaluation of options, Special Meeting of Ministers Responsible for Transportation, Port-of-Spain.

3. Central Statistical Office. Annual Statistical Digest-1990 No. 37. The Central Statistical Office Printing Unit.

4. _____. Quarterly Economic Report January-June 1990. _____.

5. Central Planning Unit. (1991). Profile of the Ministry of Works, Infrastructure and Decentralization.

6. Chrzanowski, I. An Introduction to shipping Economics, Shipping Policies and their Evolution. ed. S.J Wiater Surrey United Kingdom: Fairplay Publications Ltd.

7. Cowley, J., "Possible Developments in marine safety".

8. Economic Commision for Latin America and the Caribbean(ECLAC), The restructuring of public-sector enterprises: the case of Latin American and Caribbean ports, LC/R.1066-25 October 1991.

9. _____. Caribbean short-sea transport, its role, challenges and opportunities, LC/R.427-24 May 1985.

10. _____. Structural changes in ocean-liner transport: Prospects and implications for policy formulation.

11. Gooding, Y., "Black Gold-Blue Seas, Can they co-exist?." diss., World Maritime University, 1986.

12. Goss R. O., Economic Policies and Seaports; Maritime policy & Management., 1990, Volume 17, No. 3;
- "The economic functions of seaports" pp. 207-219.
- "The diversity of port policies" pp. 221-234.
- "Are port authorities necessary" pp. 257-271.
- "Strategies for port authorities" pp. 273-287.

13. Goss R.O, Studies in maritime economics, Investment in shipping and the balance of payments: a case-study of import-substitution policy (pp. 47-60). Cambridge University Press- London, New York, Melbourne.

14. Vanags, A. H.. Maritime Congestion: An economic analysis. In R.O. Goss, Advances in maritime economics. Cambridge University Press- London, New York, Melbourne.

15. Guidelines for the formulation of a National Shipping Policy for the Republic of Trinidad and Tobago, April 23, 1981.

16. Inniss A., "The role of shipping in a developing economy". diss., 1991.

17. INTERTANKO, Tanker Shipping and the Developing countries.

18. James, C.- On behalf of the Standing Committee on the Environment, "Guidelines for environmental administration", April 24 1987.

19. Kenchington, R.A Managing Marine Environments. Taylor & Francis, New York * Bristol, P.A. & Washington D.C. London.

20. Kim, J. E., "The optimum maritime policies of a government for the promotion of safety at sea and the protection of the marine environment(in particular with regard to the Republic of Korea)." diss., World Maritime University, 1989.

21. Kinghorn C. M. Jr.- Prepared for the government of Trinidad and Tobago, "Policies, legal authorities, and structures for environmental management in Trinidad and Tobago".

22. Maritime Services Division, The shipping legislation of Trinidad and Tobago.

23. _____. The activities of the Maritime Services Division, 6 January 1992.

24. Memorandum of Understanding with respect to Maritime Safety between the Ministry of Communciations and Works of the Government of St Vincent and the Grenadines and the Maritime Services Division of the Ministry of Works and Transport of the Republic of Trinidad and Tobago.

25. Ministry of Energy(1988/89). Report of the team appointed to review the problems related to chronic oil pollution in the petroleum industry and to prepare draft regulation on oil and grease limits.

26. Ministry of Environment and National Service, Rivers and Waterways-Our business Protecting the Environment, June 6th-7th, 1990.

27. National Planning Commission. Restructuring for Economic Independence: Draft Medium Term Macro Planning Framework,1989-1995, Policy paper infrastructure.

28. National Planning Commission.(Sept. 1990). Restructuring for Economic Independence, Medium Term Macro-Planning Framework 1989-1995. The Central Statistical Office Printing Unit.

29. National Transportation Policy Project (Draft Final Report) Volume IID- Marine Sector and Trinidad and Tobago - Lea-Pal Joint Venture; March 1983.

30. Point Lisas Development Corporation, Annual Reports 1983-1989.

31. Policy paper- "Infrastructure Sea Transportation," First Caucus on Infrastructure contributing to the Draft Medium Term Macro-Planning Framework 1989-1995, Port-of-Spain, Trinidad & Tobago.

32. Port Authority of Trinidad & Tobago, "Looking towards the year 2000-Executive summary," March 1991.

33. _____." Port-of Spain Waterfront Development plan".

34. _____." Strategic Plan 1989- 1993", prepared by E.R. Doyle.

35. _____." Towards a rationalization of sea transport and related services in Trinidad and Tobago," October 1989.

36. Pukkamaan- "Perspectives on maritime policy development"- diss., World Maritime University, 1986

36. Qing-Nan, M. (1987). Land-based Marine Pollution: International law Development. London/Dordrecht/Boston: Graham & Trotman/Martinus Nijhoff.

37. Report of the cabinet-appointed committee to plan a sustained programme to clean up major rivers and waterways in Trinidad and Tobago-July 1991.

38. Report of the meeting of experts on the creation of intra-port competition in the Caribbean, Port of Spain(Trinidad & Tobago) 5 December 1991.

39. Report on the structure of the Maritime Services Division in accordance with Part XX1V of the Shipping Act, 1987 (Act No. 24 of 1987) - submitted by a team comprising of G. Arnold, Y. Gooding, E. Lewis, F. Regis and B. Rial - March 19, 1988.

40. Republic of Trinidad & Tobago- Review of the economy 1989. The Central Statistical office Printing Unit.

41. _____.Review of the economy 1991.

_____

42. Roach C. A. (Lt. Cdr), " The Maritime Services Division" The Nautical Institue, February 1990.

43. _____, " The development of the maritime administration of Trinidad & Tobago", 23 October 1990.

44. Sea and Air Transport handbook of Trinidad and Tobago 1990/91; Charter North America Inc.

45. Siung-Chang, A.(1988) - " Environmental Assessment of Marine Pollution and Coastline Degradation- 1988 in Trindad & Tobago".

46. _____. "Ecological perspective: Man's paradoxical role in the natural environment". Trinidad and Tobago Registered Nurses Association, Trinidad and Tobago Nurses Association of America Inc. and Trinidad and Tobago Nurses Association united Kingdom, Tobago, 16th-21st June 1991.

47. Squires, M., " A proposal for the establishment of an adequate maritime administration in Trinidad and Tobago." diss., World Maritime University, 1986.

48. The House of Lords Select Committee on Science and Technology, Safety Aspects of ship Design and Technology, Session 1991-92 2nd Report.

49. Trinidad and Tobago Gazette(Extraordinary)-1991. The Government Printery, Port-of-Spain.

50. UNCTAD- Port pricing- TD/B/C.4/110/Rev.1, Chapter II, pg.12.

51. _____. Port problems-Ports and economic development-policy issues-TD/B/C.4/248.

52. _____. Major issues in World Shipping (a) Merchant fleet development- Structure of World Shipping-TD/B/C.4/301.

53. _____. Port Development, a handbook for planners in developing countries-TD/b/C.4/175/rev.1

54. _____. Co-operation between ports-TD/B/C.4/AC.7/4.9.

55. United Nations Economic and Social Commission for Asia and The Pacific- Port Development Policy-ESCAP Port Development Series No.7.

56. United Nations Economic and Social Commission for Asia and the Pacific-Report of the Workshop on shipping policy. No.11.

57. Vanchiswar, P.S.- Establishment/Administration of Maritime Affairs with particular reference to developing countries, Volume I - World Maritime University, Malmoe, Sweden- Revised 1987

58. Yearwood, S., "Investigations into shipping casualties in Trinidad and Tobago- A legal and administrative perspective." diss., World Maritime University, 1989.

B. JOURNALS, PERIODICALS, NEWSPAPER ARTICLES.

1. Alexander G., " WISCO cuts deficit, staff in move to achieve viability," Sunday Express 3 March 1991.
_____ . " Bright future ahead for SCOTT," _____ _____ 3 March 1991.

2. "A Short History of the Shipping Association of Trinidad & Tobago", Caribbean Shipping, May 1991

3. Couper A.D. , "Environmental port management", Maritime Policy & Management Vol. 19, NO. 2, 165-170.

4. Chrzanowski I, " Current aspects of international shipping policy" Maritime Policy & Management, 5, 289-295 (1978).

5. Le Marin; " La C.G.M. sur la voie de CARICOM", 10 July 1992.
_____; " Le naufrage de la WISCO", _____.
Le Journal de la Marine Marchande; " C.G.M.: Projet de filiale et deux nouveaux services dans les caraibes". 26 June 1992.
_____; " C.G.M./Caraibes- le succes d'une nouvelle strategie".____.

6. Lloyd's list; Lloyd's of London press Limited:
- "Government may step in over ports row", Publication date, /06/91.

7. Marine Policy; The International Journal of Ocean Affairs, Volume 14, Number 3, May 1990:
-Davis, J.W.- "Global aspects of marine pollution policy: the need for a new international convention".
-Nijpels, Ed H.T.M- " Sustainable development and risk management".

8. Rampersad K., " Regional Environment suffering: Too many people," Trinidad Guardian, 8 January 1992.
_____. " Problems with quarrying must be top of the list," _____ 8 January 1992.

9. Srivastava C.P, "Safer ships and cleaner oceans: thirty years work of the international Maritime Organization" Transport Reviews Vol. 9, No.1, 45-57.

10.Totland T, "Protectionism in international shipping and some economic effects," Maritime Policy and Management, Volume 7, No. 2, 103-114, (1980).

C. LECTURES AND SEMINARS.

1. Seminar -Adar, U., "Global Trends in the Caribbean".

2. Alderton P., " Port Administration", World Maritime University, Sweden, 26th February 1992.

3. _____. " National Shipping Policy -Commercial", World Maritime University, Sweden, 16th December 1991.

4. Brown D., "Marine Environmental protection Control Strategies" IOC-IMO Oceanography module for the World Maritime University.

5. Fairclough, A. J., "The 1992 E.E.C. policy and its likely effects on Caribbean Shipping". Caribbean Shipping Association 19th Annual General meeting, Trinidad, 23-25 October 1989.

6. Frankel, E.G., "Shipping and its Role in Economic Development", World Maritime University, Malmo, November 1988.

7. International Maritime Organization, Cowley, J. "National Administrations for Safety and pollution prevention control", Seminar on Survey and Certification Tokyo, Japan, 6-10 October 1980.

8. P.S. Vanchiswar, " Endeavours of the World Maritime University for the protection of the marine environment" Environment Protection Conference, Malmo, Sweden, 18-19 August 1989.

9. The Trinidad and Tobago Maritime Legislation and Practices for merchant Seafarers, Caribbean Regional Seminar on Maritime Labour Standards, Jamaica, December 9-13, 1991.